

APRIL, 1922

THE MINING CONGRESS JOURNAL

VOLUME 8

NUMBER 4

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no. 4



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MINING REVISION BILL TO BE REMOULDED

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SIDELIGHTS ON FEDERAL TAX ADMINISTRATION

DOMESTIC OIL COMPANIES AND FOREIGN FIELDS

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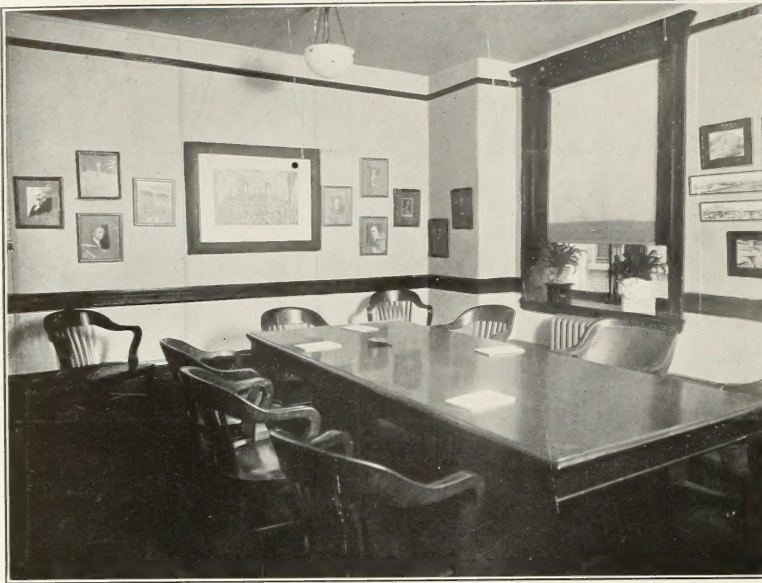
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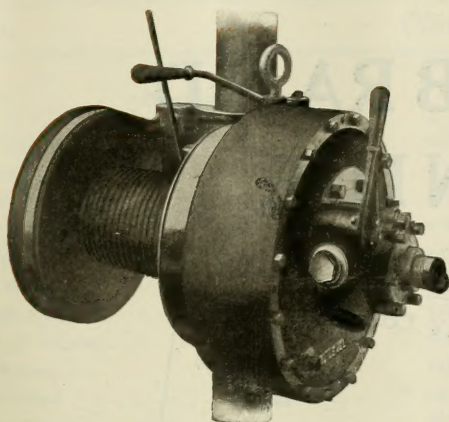
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Yours very truly,

Frederic H. Volund
Superintendent.

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511 Fifth Ave. New York

THE MINING CONGRESS JOURNAL

APRIL

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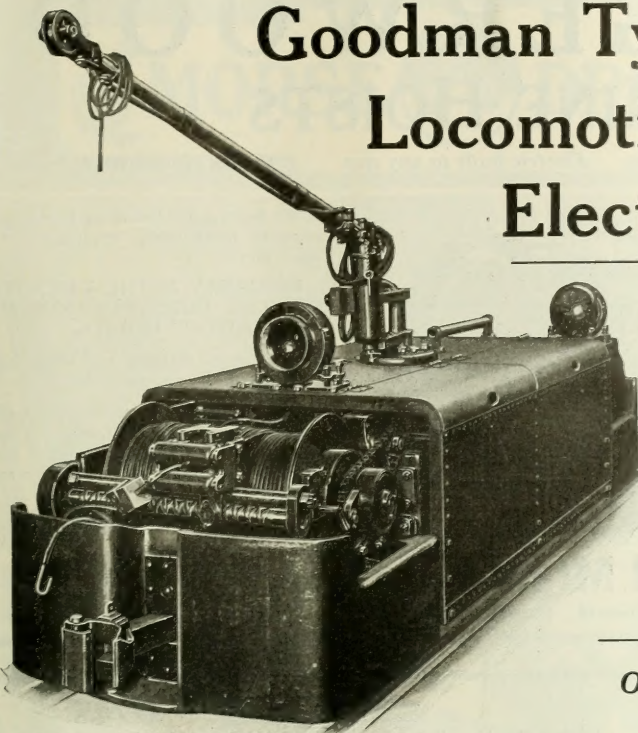


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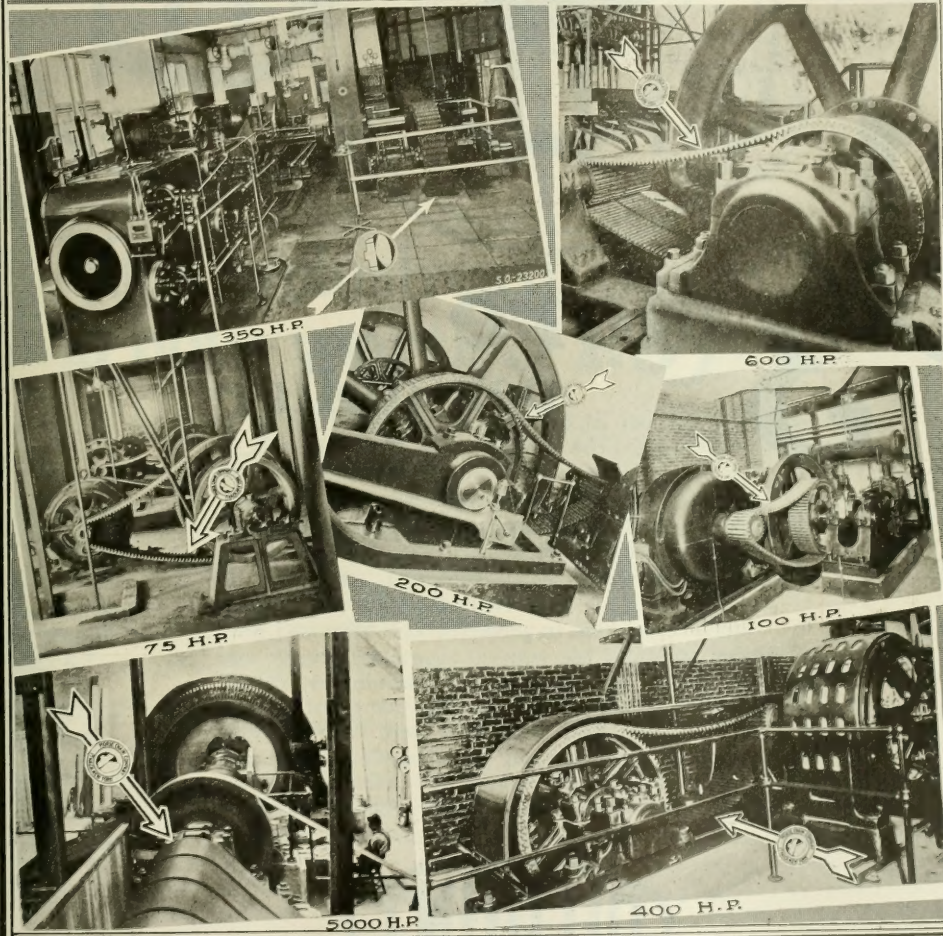
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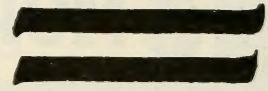
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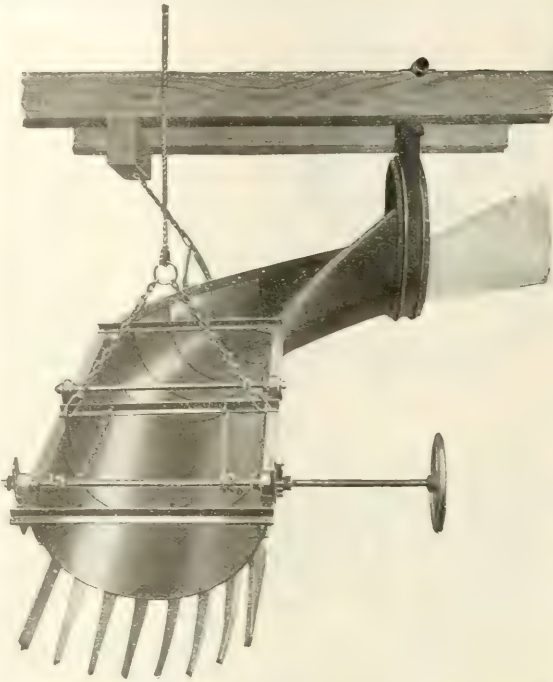
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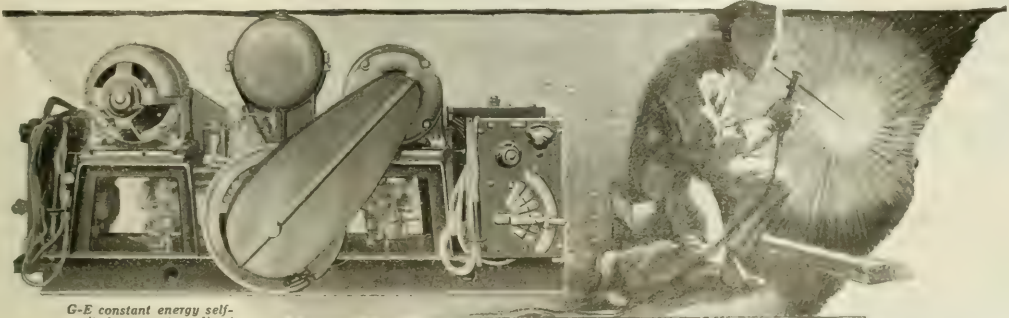
Where weighing is done in hopper or weigh-pan the recorder can take care of the loads as fast as cars are brought up.

Send for catalogues and data on representative installations

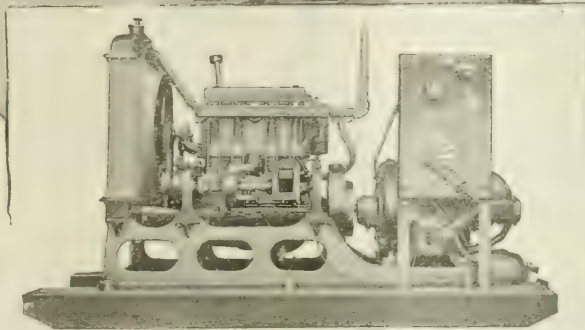
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JUDICIAL SALE

Mining Properties, Plant and Equipment

in the

SUPREME COURT OF ONTARIO

In The Matter of Premier Langmuir Mines Limited

and

In the Matter of The Winding-up Act and the Amendments Thereto

Pursuant to the order for sale made herein, dated the 28th day of February, 1922, there will be sold by public auction by the Liquidator, with the approbation of H. S. Blackburn, Esquire, Local Master of this Court at London, at his Chambers at the County Buildings, Dundas and Ridout Streets, London, Ontario, on Monday, the first day of May, 1922, at the hour of 3 o'clock in the afternoon, the following lands, buildings, mining plant and equipment, namely: those certain parcels of land situate in the Township of Langmuir in the District of Temiskaming (Ontario), and numbered 39, 40, 41, 42, 43, 44, and 4373 in the Register for the District of Temiskaming, containing two hundred and fifty-five acres more or less and being the mining properties formerly owned and operated by Premier Langmuir Mines Limited as a barytes property; together with the buildings, mining plant and equipment now on the said mining properties and heretofore used in connection therewith.

On the said lands are situate the following buildings: Mill Building, Engine House and Boiler House, Blacksmith's Shop, Superintendent's Office, Shaft House—all of which are protected by asbestos sheeting—Office, Storage Building, Bunk Houses with beds and bedding, Dining Camp with ordinary equipment and a stable. The Mill Building is equipped with the following machinery: Crusher, Dryer, Jigs, Pulverizer, and necessary shafting and pulleys. The Engine House is equipped with a Goldie-McCulloch Engine, 150 h. p., and the Boiler House contains a boiler of 125 h. p., a hoist and other equipment. There is an electric light and power plant, a tramway from the mine to the water, two horses and harness.

There are on the property about 125 feet of shaft work and about 250 feet of tunnelling and drifting.

The Liquidator has a letter from the Provincial Geologist, Ontario Department of Mines, stating that "the veins are strong and well defined and there is a large quantity of barytes in the deposits." There are showings of native silver and argentite in some of the veins. Photographs and descriptions are contained in some of the government mining reports.

The lands are situate in the Township of Langmuir in the Porcupine Mining Division and are on the Night Hawk River about thirty miles from Connaught Station on the T. & N. O. Ry., and about thirty miles southeast of Porcupine.

The property will be sold in one parcel.

Ten percent. of the purchase money is to be paid down on the day of sale and the balance, over and above the amount which may be found to be secured by a mortgage on the said lands to secure a bond issue (which mortgage the purchaser is to assume), to be paid within thirty days after the sale or as soon thereafter as the amount of the mortgage is ascertained.

In the event of the amount of the mortgage not being ascertained within thirty days after the sale the purchaser shall, if required, pay such additional sum on account of the purchase money as may be fixed by the said Local Master, having regard to the probable amount which may be found to be secured by the said mortgage, and upon such payment the purchaser shall be entitled to possession. Any balance remaining unpaid after the amount of the said mortgage is ascertained shall be paid forthwith thereafter.

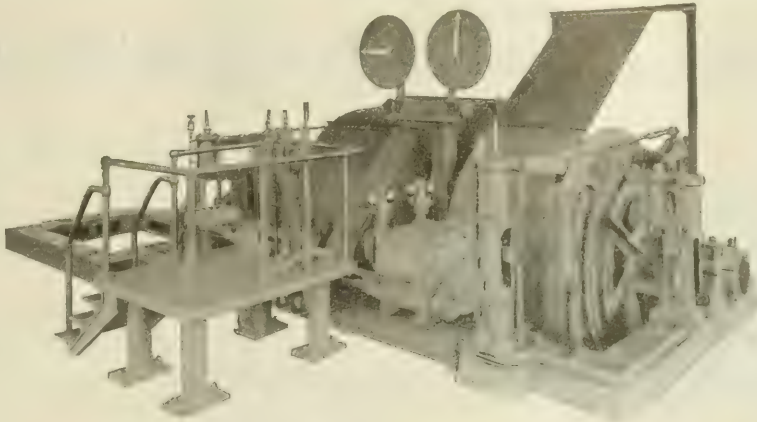
The purchaser is to search the title at his own expense and fifteen days from the day of sale shall be allowed for that purpose and if any objection to or requisition on title is made within that time which the vendor is unable or unwilling to answer or remove the contract shall cease and the deposit money will be returned to the purchaser without interest. The vendor is not to be bound to furnish or produce any abstract of title or any proof or evidence of title other than those in his own possession.

In all other respects the terms and conditions of sale will be the standing conditions of the Supreme Court of Ontario.

Further particulars can be had from F. W. Raymond, Esquire, Liquidator of Premier Langmuir Mines Limited, London, Ontario, and from Ivey, Elliott & Ivey, Esquires, London, Ontario, Solicitors, for the Liquidator.

Dated at London this 13th day of March, 1922.

H. S. BLACKBURN, Local Master, Middlesex.



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This VULCAN (of Wilkes-Barre Hoist) built for the Detroit Rock Salt Company has two loose drums controlled by separate clutches; post brakes, power operated; auxiliary motor shaft brake; herringbone gears running in oil-tight gear case; complete VULCAN safety features to prevent over-travel and over-speeding.

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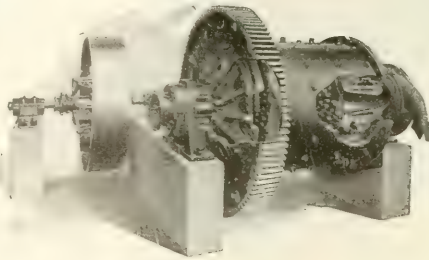
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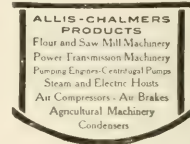
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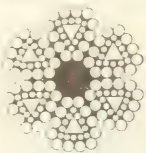
They have a double purpose in advertising in THE MINING CONGRESS JOURNAL. **First:** They believe that the best results can be obtained by presenting their product directly to the men who purchase equipment. **Second:** They realize that the work being done by The American Mining Congress is important to them as well as to the operator.

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THE AMERICAN MINING CONGRESS

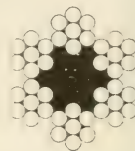
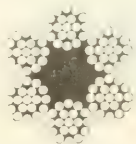
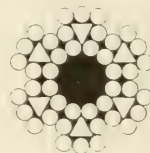
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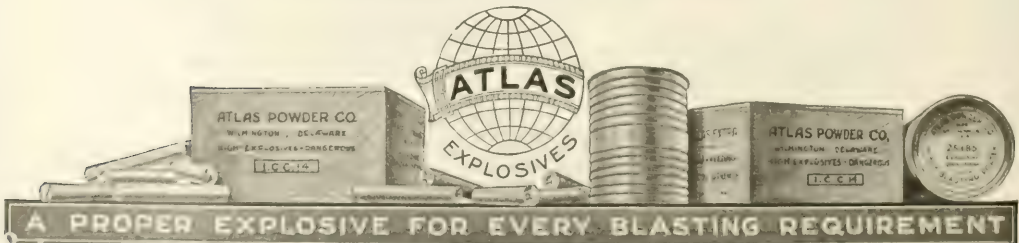
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PUBLISHED EACH MONTH BY THE AMERICAN MINING CONGRESS, MUNSEY BLDG., WASHINGTON, D. C.

New York Office: 19 W. Forty-fourth St. Telephone: Murray Hill 0136
Chicago Office: 109 North Dearborn St. Telephone: Central 8744

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Single Copies .30

VOLUME 8

APRIL, 1922

NUMBER 4

REAL PROTECTION

THIS is not going to be a manufacturers' tariff bill. The manufacturers are going to be protected. The producers of the country wants to see them protected because they know that they cannot sell their wool to idle mills, their metals to German factories, their coal to manufacturing plants with cold and empty smokestacks. But the manufacturers are not going to be protected at the expense of the rest of the country.

They are not going to be permitted to have high protective rates on their manufactured products and turn back to the producers of all their basic materials and say, "We are going to buy these materials in the free markets of the world and force you American producers to compete with the labor with which we refuse to compete."

Never again is this country going to stand for a tariff bill which through discriminatory tariff rates centralizes the industry of the United States east of the Alleghany Mountains.

Those citizens who produce the basic economic wealth of the country, agricultural products, cattle, citrus fruits, and mined products, will not submit to sweating out their lives under the hard conditions their industries put upon them and ship their products into free, unprotected markets in competition with eggs from China, with beef from Argentina, with lemons from Sicily, with sugar from the tropics, with magnesite from Austria, with manganese from Brazil, all produced with low-priced labor, pay one-third of their return for transportation costs, and then try to buy in the high-priced, protected, manufacturers' market the supplies necessary to carry them through another year. Never again will these people stand for this and their representatives in Congress know it.

Twenty-six members of the Senate have so pledged themselves and in so doing they are not taking an arbitrary stand. They are taking the position that their constituency sent them here to take.

The manufacturers of the east who have been opposing this policy, while they have been asking everything for themselves, might just as well become used to this idea. Those who don't and who continue opposing the efforts for just protection on the part of these equally American industries are due for a sudden jolt.

HANDS OFF THE COAL STRIKE

PERHAPS no organization has more uniformly and strenuously urged that all industrial disputes, whether between labor or capital or between contending factions of either labor or capital, should be settled by compromise rather than by contest, and per-

haps no other organization has so continuously insisted that controversies of this or any other character should always be settled by arbitration rather than by war. The American Mining Congress has regarded this principle as the basis of all stable government, and has regarded stable government as the greatest blessing of mankind. It has always believed that controversies which make for the weal or the woe of the public could be better settled by courts of arbitration than in any other way, and that parties unwilling to submit their differences to a tribunal representing the public as a whole are in no different position than those who violate the well-settled principles of criminal law, and who, under our system of government, are subject to discipline in the courts of law and equity established by government. For many years labor unions insisted upon and urged the creation of boards of arbitration for the settlement of industrial disputes. At that time movements of this kind were opposed by employers. Later employers came to believe that the final settlement made in the adjustment of a costly labor war might as well be made in advance of the difficulties, but, when the operators were inclined to favor industrial arbitration boards, the labor unions had changed their attitude, possibly because of a growing confidence in their own power to enforce their demands.

It is a matter of sincere regret that there is not now some tribunal before which the labor dispute which is now in progress in the coal fields might be adjudicated fairly and finally in the interest of the public, the operator and the miner. Unfortunately, there is no such tribunal except the bar of public opinion, whose decrees, which usually control in the end, are seldom enforced until untold suffering, destruction of property and loss of life have intervened. The present contest has largely to do with issues which do not appear upon the surface. Both sides of the controversy present issues which, taken by themselves, justify their part in the contest. The miner who can work but one-half the time must necessarily have double pay for the period in which he works in order to support himself and family during the time of necessary idleness. The operator who must sell his coal at a price which the public can afford to pay finds that public unwilling to pay two prices for coal and not only unwilling but unable because of the fact that coal is but one element in the cost of commodities which that industry transfers to another consuming public. The present strike necessarily includes many issues which should not be a part of the present contest. The industries of the world are out of joint. The world is endeavoring to get itself back to as nearly normal condition as possible. Two great issues must be settled before this condition can be reached. The first relates to the monetary exchange between nations in their relations with

and other and between business concerns. The second and most directly at issue is the cost of transportation. No article has any value until it is moved from the place where it was originated. The transportation rates are so high as to create a difficult barrier to a return to normal business conditions. Transportation rates are very largely based upon the cost of railroad labor and the cost of coal largely composed of mining labor. In most other lines wages have been adjusted at lower levels. In many lines of business wages are at the pre-war level. Business must remain abnormal until the public is convinced that a stationary level has been reached. Coal wages and railroad wages are now the two greatest obstacles to a return to normal business conditions. If anything like a pre-war normal condition is ever to be reached either these lines of enterprise must be adjusted downward or else all other lines must be adjusted upward. Business cannot be normal until the wage levels in different enterprises have some fair relation to each other. The present contest is one between economic laws and a labor monopoly. Neither side of the controversy is entirely free from criticism. It seems almost to be what Secretary Seward named the war of rebellion, "an irrepressible conflict." Perhaps at no time in history could such a contest be carried on with less inconvenience to the public and less injury to the industrial structure of the nation. Let us hope that the final settlement will be in accordance with economic laws and let us hope that the struggle be carried on without violation of law. Should the strike be prolonged, the most interested party to the contest, the public, may be called into action. Unfortunately, as we believe, that public has provided no means for the settlement of such controversies except the one now appealed to, endurance and brute force. It is the duty of the government to protect the lives and property of its citizens. This much has been provided for by law. It will be well for the government to refuse to exercise unusual means to put an end to an irrepressible conflict. In the absence of legal provisions for the arbitration of these disputes it will be well for the government to enforce such law as has been provided and leave the contest to be settled by fundamental economic laws.

SOUTH AFRICAN GOLD CRISIS

THE IMPROVEMENT in the quotation of sterling exchange during the past six months has imposed extraordinary burdens upon the producers of gold in the British Empire, which will result in a heavy decline in the gold production of the world in 1922. As the sterling quotation increases toward the gold parity, the exchange premium diminishes so that on February 23, 1922, the producer of gold in the British Empire obtained but 93s. 9d. per fine ounce in the London market, a premium of only 109.4 percent over the Bank of England pre-war buying price. This was a new low record for exportable gold since September, 1919, which was the second month after the producer of gold in the British Empire was permitted by the government to export gold subject to license in order to benefit by the discount in exchange.

During 1920 the premium averaged about 30 percent, which compensated to a considerable extent the lost purchasing power of the British gold ounce in terms of gold production cost. This exchange premium benefit is directly reflected in the lessened decline in the South African gold output since the premium became effective.

When the British Government permitted the export of gold under license in July 1919, it was anticipated

that the variable and uncertain exchange premium would only partially alleviate the pressure of high operation costs and would introduce an element of speculation in the industry which would continually be a source of embarrassment. It was, however, recognized at the time that the action of the British Government was just and equitable and would be a real benefit to the producers. The action of the British Government in this matter was liberal in comparison to the inaction of the United States Government in providing no compensation to the American gold producer while the credit and currency inflation under governmental control, especially that which took place after the armistice, continually increased gold production costs.

The entire load of inflation was forced upon the gold producer in this country with a consequent decline of over 50 percent in output of gold from 1915 to 1921 and the still heavier indirect losses of ore reserves and capital investments made in the gold mining industry.

The American producer having undergone the crucial experience of bearing maximum production costs without any compensation in the price which was paid for his gold, with complete understanding may now more fully appreciate the serious predicament confronting the gold producers of South Africa and Australia, as they are compelled to bear the most extreme force of economic pressure. If the problem concerned only those intimately engaged in the gold mining industry, this economic tragedy might end in the losses sustained by the operators and without serious public concern.

The financial world, however, is making a brave effort to sustain the gold standard and to cause it again to function normally. It is unfortunate that the great reduction in the production of new gold should still further retard the return to the gold standard. With all of the difficulties of unbalanced national budgets, unbalanced trade, fluctuating and depreciating currencies to deal with, a normal influx of newly produced gold would have proved as invigorating to the world's financial system as the transfusion of blood into an almost lifeless body.

The recent labor strike in South Africa was caused primarily by the necessity of the operators to cut production costs as the exchange premium became less. The effort of the producers in South Africa to reduce costs by extending working hours met with the resistance of the European, or white, labor. This failure in adjustment, which threatened the immediate closing of many of the properties, forced the operators to substitute, wherever they could, native for European labor, with the result that still further resistance developed, terminating in a strike and armed conflict between the union and the government. Latest reports indicate that the union opposition has broken down and that the men are about to return to work.

On February 23 it was reported that only a few of the mines on the Rand were operating with the aid of native labor and mine officials at about 50 percent of normal output. Under the operating costs of 1920 and the par selling price of gold of 85 shillings per fine ounce, there were 31 out of 39 properties in South Africa which could not meet current operating expenses excluding interest on the invested capital and overhead. Should sterling still further approach the gold par, it is quite evident that an extension of working hours or any other operating improvements which may be employed, could hardly enable the vast majority of mines in this region successfully to continue operations. Not until the wage and material price levels return to the normal of 1914 can a

condition of normality be restored to the gold mining industry in South Africa. The living cost level must also return to the pre-war level before wages can be deflated completely.

These are the conditions which also pertain here as well as in South Africa. The American producer of gold was in complete sympathy with the producers of gold in the British Empire when they urged the British Government to stabilize the exchange premium which at the time was fluctuating from 20 percent to 50 percent above the gold standard price. In fact, the producers in this country were urging the McFadden bill to accomplish for the American producer what a stabilized exchange premium would have accomplished for the British producer. The industry both here and abroad would have been stabilized, saved from economic ruin and physical disintegration and would now have been yielding an output to hasten the repair of the world's economic machine. The cost of having rendered this temporary aid both to producers here and abroad would have been infinitesimally small as compared to the benefits in which all industry and the people of the world would now be participating. No cessation in the operations of South Africa would have taken place and the mines of this country instead of being flooded, their ore reserves caved, surface plants disintegrating, would now be delivering a new output of gold to invigorate world trade.

The opposition of the government and the financial leaders abroad defeated the appeal of the British gold producers to stabilize the exchange premium, and in this country the government and the financial leaders were joined by the jewelers who were called upon to pay more nearly the cost of gold production. In opposing proposals for the temporary relief of the gold mining industry, the McAdoo committee in its report expressed the greatest satisfaction that its conclusions agreed so closely with those of the British Currency Commission which had just previously reported. The gold producers made a just, equitable and economically sound plea for temporary aid. Let those who have been responsible for the breakdown in the gold mining industry assume now the responsibility for the result. The gold producers of the world can never be charged with neglect in presenting adequate warnings of the serious conditions which beset the industry and a constructive remedy.

The cost of gold production neither here nor abroad has declined sufficiently to warrant the resumption of normal operating conditions. Both here and abroad the gold production will be sub-normal for many years to come, unless governments will assume a more liberal policy to enable that industry to profitably maintain itself under the present conditions of abnormal costs of both labor and supplies. The financial leaders and others who have not been willing to assist the maintenance of the gold mining industry over this extended period of economic stress, may yet realize the need of a return to a normal gold output for the world in order to sustain the gold standard and to meet the continually increasing financial requirements of industry and commerce.

A FINANCIAL LEADER NEEDED

IN ALL world history there has never been a greater demand in any field of enterprise than now exists in the financial world for a leader able to develop and forceful enough to make effective a plan looking to the stabilization of world finance. Gold is still the basis of our monetary system. There is more gold in the world today than ever before in history. There is enough gold in the world, if properly utilized, to stabilize world credit. It is generally recognized that this country must lead the way. That our increased gold reserves must furnish the basis of credit in foreign nations with which we desire to do business and which, excluding their internal debts, are able to pay for goods which they need and which we greatly need to sell. This situation is recognized by the Treasury of the United States. Comptroller Crissinger in a recent address delivered in New York stated that, "*It is the duty of the United States to take the leadership in bringing the world back to a gold standard because this country has become the monopolist of the world's monetary gold.*"

"With about 7 percent of the world's population, this country holds some 40 percent of the world's gold stock. We have literally more gold than we have proper use for; more gold than it is good for us to have. It is vastly better than we should, through carefully devised measures, calculated to conserve every interest involved, begin the redistribution of this gold about the world so that it will be restored to its proper function of maintaining a sound relationship between currency systems and the metallic standards."

"If we do not do this in time, the inevitable operation of economic law will sooner or later begin to do it in spite of us, and perhaps in circumstances and by methods that will result in unfortunate consequences. Now is the time to begin preparation for this redistribution and for the restoration of money systems. As the custodian, I might say the trustee, of the greatest stock of gold that ever came into the possession of one country, our duty both to ourselves and to the world at large demands that we take the lead in developing procedures by which this gold basis of a sound currency system may be made available to the service of the entire business world."

Where is the financial leader who will do more than theorize upon this subject? A number of plans have been considered by the public. Each in turn has been perforated with criticism, but, so far as we know, no one has undertaken to frame a proposal having regard to the intelligent criticisms which were aimed at previous proposals. With the surplus of idle gold which this country now possesses it is certainly, as Mr. Crissinger says, "the duty of the United States to take the leadership in bringing the world back to a gold standard." World fame awaits the leader who can develop and make effective a solution of this all important problem. A conference of those who realize the importance of this problem should be brought together for the purpose of discussing these issues. Such a conference might well be called by the Treasurer of the United States. There may be reasons why the Treasurer of the United States should not call such a conference. Certain it is that a matter of such profound public importance to every business, financial and industrial interest of this country should receive the careful consideration of financial leaders with a view to harmonizing the differences, taking the best from each of the plans proposed, and in the end working out some plan by which the surplus capital of the United States may be harnessed for world service in the development of the industrial activities, through which, and through which alone, the debt of the world can ever be paid. The American Mining Congress does not regard itself as the proper agency for the inauguration of such a movement, but it does insist that this country which, to quote Comptroller Crissinger, "has

because the metallologist of the world's monetary gold" provide for such a movement. The American Mining Congress will gladly cooperate with any other agency willing to undertake such a movement with proper intelligence and discretion.

MINE TAX STATISTICS

STATISTICAL REPORTS issued recently by the Bureau of the Census concerning the mining industry contain what purports to be authentic data as to the taxes paid by the mining enterprises of the United States, the accuracy of the information being indicated by the fact that it was supplied to the government by the operators themselves. These reports have been sent broadcast to schools, colleges, universities, libraries and individuals. The figures given have been quoted in newspapers, periodicals and public addresses on the assumption that they are substantially correct.

The statistics published in these reports were compiled for each state for the purpose of showing the "absolute and relative magnitude of the different branches of the mining industry and their growth or decline." The amounts of taxes, including Federal capital stock, corporation income and excess profits taxes, and state, county, and local taxes, paid by mining enterprises for the years 1909 and 1919, are shown, together with the percent of increase during the ten-year period.

From these census reports a table was compiled and published in the March issue of the MINING CONGRESS JOURNAL, and as a result state representatives of the special tax committee of the American Mining Congress and others have called attention to the fact that the census figures do not reflect true conditions. The following is quoted from a letter received from the Montana representative:

"Six of the operators out of the 259 in Montana which your report purports to cover, paid in 1919, a total of \$1,044,161.19 in the State of Montana alone. This, of course, does not include any Federal taxes paid by any of these six operators; neither does it include any of the taxes paid by 253 other enterprises, as covered by your report.

"Your report gives Montana credit in 1919 for 259 operators of \$1,018,265, for both state and Federal taxes, which is less than these six operators paid to Montana alone. These six operators are metal mining companies, and Montana has very extensive coal mining operations besides its metal mining industry.

"I also find that the Anaconda Company alone, with its subsidiaries, paid in Montana in 1909, \$440,900.32, whereas your total, for 373 operators for that year, for both state and Federal taxes, is \$453,386.00.

"The unfortunate part of publication of data of this kind, without knowing its accuracy, is that it puts in the hands of the politician and the demagogue figures which he can use on the authority of a publication by the American Mining Congress to the detriment of the mining interests of this state in tax controversies, which are very live issues at this time."

The publication of this data in the MINING CONGRESS JOURNAL was intended to arouse interest in the general tax situation and if it has resulted in awakening the mining industry to the fact that inaccurate information concerning taxes paid by mining enterprises is going out to the general public, it has served a good purpose. The special tax committee hopes to secure and publish complete information.

The mining industry of Montana already has taken steps to counteract the adverse influence of erroneous statements concerning the taxes paid by mining enterprises of that state by publishing correct data compiled from the official state records.

Statistical reports issued by the various departments of the Federal government have a wide circulation and are used extensively throughout the country for reference purposes. It is therefore exceedingly important

that they do not contain misinformation which may be used to the detriment of the industry to which they relate. The reports of the Bureau of the Census contain much valuable information and the census administration is not to be severely criticized for the publication of erroneous data which is based upon information obtained from the operators. This situation emphasizes the need of a broad study of the subject of mine taxation, especially such as is now being conducted by the American Mining Congress special tax committee.

MAKE THIS THE YEAR

IT IS now generally recognized that the corner has been turned in regard to business conditions. Bank reserves have increased, the rates for money have been lowered, even the international exchange situation has been distinctly bettered. Liquidation has been completed in all but a few of the basic industries and in many the process of expansion has already begun.

Recent reports from the great agricultural states in the central west furnish substantial evidence of the betterment of basic conditions. With the help of the War Finance Corporation the farmers in these districts have weathered the storm and the purchasing power of the agricultural states is beginning to gradually reappear. Its reappearance will commence to increase manufacturing production noticeably during the next few months.

In the western mining states there are definite indications of improvement. Copper mines are beginning to produce and there is good reason to believe that the sound policy of the copper industry in closing operations, thereby making it possible to gradually absorb the surplus copper stock, will bear fruit during the next six or eight months and result in rich rewards.

In the coal industry the outstanding fact is the coal strike which will take place on April 1. Ordinarily this might be considered a depressing factor, but under present conditions it is not an unmixed evil. The threat of the strike has already stimulated the demand for coal and greatly increased its production. The outcome of the strike is inevitable and the chastening of labor as a result of a clean-cut and decisive struggle will clear the atmosphere, tend to liquidate operating costs and thereby hasten the readjustment of other industries. The coal strike may well prove a blessing in disguise.

All of these facts indicate the possibilities of a revival of business during the coming months of 1922. They furnish a sound basis for genuine optimism—an optimism of fact as well as of faith. The fulfillment of any optimistic belief is based, however, on careful preparation and definite tangible action. If the present spring hopes for 1922 are to be fulfilled it is time to act, to initiate new policies, push advertising and to start sales campaigns. Collective effort all along the line of this kind will make 1922 the year of successful transition from industrial depression to business recovery.

Last October, in the face of depressed conditions, the American Mining Congress undertook to stage the largest and most comprehensive exposition of mines and mine equipment which had ever been assembled in this country. The successful results of that exposition to the exhibitors is the best evidence of the value of a fighting spirit in the face of adverse conditions. This October the American Mining Congress will carry on the work so successfully inaugurated at Chicago and will again, through the medium of its Twenty-fifth Annual Convention and National Exposition, provide the meeting place for mine operators and the manufacturers of mine equipment and mine machinery. To the operators

these expositions furnish an opportunity of studying the very latest forms of mine equipment and mine machinery, so indispensable a factor in the reduction of operating costs and the utilization of low-grade ores. To the manufacturers of mine equipment these meetings furnish a personal contact with representative potential purchasers from all parts of the United States and an opportunity for national advertising of great value.

The American Mining Congress desires to make this meeting in Cleveland, Ohio, October 9 to 14, a meeting worthy of the mining industry and it cordially invites all of the members of the industry, both on the operating and manufacturing sides, to become participating partners in this great effort to make 1922 the year for business revival and general prosperity.

THE CASH BONUS

WITH RESPECT to the alleged dissatisfaction on the part of ex-service men generally over the delay in passing a bonus measure, it is questionable whether or not their disaffection is as widespread as political propoganda would have the public believe. The public will remember that \$500,000,000 is being appropriated annually to care for disabled veterans, and that the government will leave no stone unturned in its efforts to alleviate the distress of those unfortunates who have been handicapped by disabilities resulting from service. Appropriations will be increased, to whatever extent necessary, to properly care for the disabled.

As to the bonus, the viewpoint of many ex-service men is expressed in the following quotation from a veteran who is not in any way interested in the political side of the issue:

"I served overseas from 1917 to 1919 in the advance zone of the armies as an enlisted volunteer from the State of Kansas, and I venture the opinion that able-bodied men, like myself, are more concerned about the men who were disabled or contracted disease through fighting and exposure in the trenches than they are about a cash bonus to those who came through unscathed, many of them better off physically than when they went in. The administration has been entrusted by the electorate with the job of putting through constructive legislation that will not disturb or retard the return of business and industrial stability, and which will insure steady employment for the former soldier, a condition far more vital to his welfare than the temporary relief which a cash bonus might afford."

The mining industry wishes to bear its fair share of the tax needed to adequately provide for the disabled, and will look with disfavor upon any attempt to shirk the responsibility resting upon the country to make such provision; but, without taking a position one way or the other regarding the feasibility of a bonus, the mining industry looks forward to the restoration of conditions which will enable the mines to operate at full capacity in order to provide continuous employment for men who want to work, and an unnecessary increase in the tax burden, which would postpone the return of normal conditions and intensify business and industrial depression, can not be justified by any process of reasoning.

Urged to Speed Oil Data.—Refiners who appreciate the statistics of the Bureau of Mines are not reporting their data promptly and, consequently, are greatly regarding issuance of regular reports and greatly reducing their usefulness. The Bureau officials complain at the delay and, urging the refiners to help the help to help themselves, ask that prompt reports be made. Press of work is the cause, the Bureau concedes, but essaying the value of its reports, it asks for help.

TRADE CHIEFS WILL MEET WITH HOOVER TO DISCUSS ASSOCIATIONS

DEFINITE EFFORTS to establish the relationship of trade associations with the government and to determine the manner in which the policy recently agreed upon by Secretary of Commerce Hoover and Attorney General Daugherty in respect to the operations of the associations are to be made at a meeting called by Mr. Hoover, to be held in Washington, April 12.

The attitude held by the various associations on the furnishing of voluntary information carrying trade statistics to the Secretary of Commerce is to be revealed in the compilation of a list which will indicate those associations which are willing to furnish the information in this manner. When questioned as to the light in which those associations which do not agree to this procedure will be placed, an official who has been concerning himself closely with the situation declared the question could not yet be definitely answered; the impression was, however, that such a move might thrust itself before the attention of those governmental agencies which have been investigating alleged illegal operations of a number of the associations.

The meeting will discuss and consider means and methods that may best be adapted to the collection and forwarding to the Secretary of Commerce of the classes of statistical information referred to in correspondence between Mr. Hoover and Mr. Daugherty, upon which the adopted policy was based. Consideration also will be given to the manner in which such information is to be filed with the department, and the methods to be used in distributing the statistics to members of the association and to the public.

COST REPORTING CASE ADVANCES TOWARD HIGHEST COURT

THE CLAIRE FURNACE COMPANY cost reporting case, involving issues with which the coal industry particularly has been vitally interested, has been brought before the Court of Appeals of the United States following perpetuation by Justice Bailey, of the Supreme Court of the District of Columbia, of the temporary injunction which he had granted the complainants, preventing the Federal Trade Commission from compelling iron and steel producers to report cost figures and other intimate details of their business. It is quite evident that the case will be contested through to the Supreme Court.

The case as it now stands on appeal to the Circuit Court makes a square issue between the bill of complaint and the amended answer of the Federal Trade Commission. The date for the argument before the Court of Appeals has not been set. The argument will be made on the sufficiency of the pleadings.

The present status of the case developed from moves made by counsel for the plaintiffs, the steel producers, and counsel for the Federal Trade Commission, before Justice Bailey, of the Supreme Court of the District of Columbia, who issued the temporary injunction restraining the commission from compelling the steel producers to submit cost figures and other data. The injunction was made permanent by an order issued by Judge Bailey last Saturday.

Counsel for both sides recently presented to Judge Bailey forms of orders and final decrees, the latter perpetuating the injunction.

MINING LAW REVISION BILL TO BE REMOULDED UNDER DEFINITE PROGRAM

LEGISLATION NOW before Congress proposing revision of the mining laws is to be so remoulded as to eliminate all serious objections which have been raised against it by members of the mining industry since its introduction many months ago. The first long step in this direction is to be taken early in April when the House Committee on Mines and Mining will open its hearings on the subject. The first witnesses probably will be members of the board of engineers which drafted the bill as it now stands.

A definite program has been outlined under which it will be sought to place the bill in such form as to receive the approval of all interests concerned. The House Committee after concluding its open hearings which will be subject to the same critical open forum of the industry that has been rendering its opinion on the present bill during the past several months. Not until all criticisms have been met will an effort be made to advance the legislation on its course through Congress. Although it is a certainty that the bill will not be enacted during this session of Congress, those who are handling it declare that there is a vital necessity for such legislation and that ultimately it will pass, but not before it will be gauged in such language as to correct evils existing under the present code without doing injury to the industry.

While no one officially connected with the measure will venture a prophesy as to the form in which it will come out of the committee, certain changes may be depended upon as being fairly certain to be effected.

TO LIMIT NUMBER OF CLAIMS

It is believed that a limitation will be placed upon the number of claims which may be filed by a single individual or company. A provision dealing with cases of failure to do assessment work within the specified period also probably will be included, barring the claimant who has failed to do such work from again filing upon the property within the period of one year after his lapse.

The committee also is likely to place a clause in the new bill providing that actual location is not necessary before drilling has led to discovery.

Much criticism has been directed against the proposed revision which would require the boundaries of claims to be laid out on the cardinal lines of the national survey. This is to be met by the committee in all likelihood by qualification which simply will require the boundaries to be laid out to coincide "as closely as possible" with the lines of the survey.

What will be done with the question of extralateral rights is something of a problem at the present time, and this matter, which stands perhaps as the most important of the issues before the committee, will require a committee vote before its final treatment in the new bill is decided upon.

The committee will have before it for consideration the tabulated criticisms which have reached its members, the Bureau of Mines, the American Mining Congress, and others, as the result of publicity and questionnaires which have been widely circulated throughout the mining industry.

The mass of opinion will include a detailed critique prepared by the mining law revision committee of the Legislative Section, American Institute of Mining and

Metallurgical Engineers. As a summary of its findings, this committee has issued the following statement:

In general the institute's committee does not believe the present law is so perfect that no improvement is possible, and it therefore favors the enactment at this time of the following portions of the proposed law:

(1) The provision for recording of claims in the United States Land Office, the burden to be placed, however, on the county or district recorders and not on the prospector.

(2) The disqualification from relocation for one year.

(3) The specification that monuments shall govern descriptions, and

(4) With certain reservations the plan for allowing extra land in lieu of the present millsites.

The committee is opposed to the following clauses of the proposed bill:

(1) The requirement for orientation of claims.

(2) The certification of discovery by a mineral surveyor.

(3) The restrictions on locations in Alaska (Why pick on poor Alaska?)

(4) The proposal for the creation of a mineral development fund, and all cash payments upon which it would be based.

On the two most important points, namely, location without discovery, and the proposed abolition of the apex right, an amicable disagreement was reached.

A suggestion for court procedure in the trial of apex and other technical mining cases is submitted by Francis A. Thomson, Dean of the School of Mines, University of Idaho and Director of the Idaho State Bureau of Mines and Geology. He suggested for consideration a plan based upon and modelled after that employed in the British Admiralty Courts in which the judge appoints or selects two experienced mariners to sit with him on the bench, these men having the same privileges as the court of interrogating witnesses, examining exhibits, and virtually become for the particular trial a part of the bench. As applied to the trial of technical mining cases in this country, these "assistant judges" would be men with ample technical mining experience and knowledge to bring out apparently insignificant technical points which may be of great legal significance.

WOULD SUSPEND ASSESSMENT WORK

EXPRESSIONS of opinion are reaching Washington from members of the mining industry who call attention to the fact that it would be desirable for Congress to again suspend the requirement for performing assessment work on claims. Under the present law this work must be performed within the fiscal year beginning July 1 and ending June 30 of the following year, this meaning that assessment work for 1921-1922 must be performed before June 30, 1922.

It is being pointed out that due to the inactivity of the mining industry, requirements to perform the assessment work within the time required by the law will impose serious hardships. Some months ago it was indicated that Congress would not further suspend the assessment requirement, but Senator Stanfield, Oregon, appreciating conditions in the mining industry, introduced a resolution suspending the time for completing the work until June 30, 1924.

PRIVATE CAPITAL TO BE GIVEN OPPORTUNITIES IN DEVELOPING ALASKA'S RESOURCES

ALASKA'S mineral resources are to be developed through the stimulation of private industry by eliminating domination of tape-bound bureaus. This is the result at which the indicated policy of the present administration obviously is aiming.

Reorganization of the government's departments is expected to result in long steps being taken toward this end, a part of the reorganization plan being understood to call for a much closer coordination of authorities supervising the administration of Alaska's affairs. This long has been felt by close students of the situation to be a necessity, since it would tend to eliminate much of the overlapping of work of the thirty-odd bureaus which now conflict with each other in looking after the Territory's affairs.

Although it is known that President Harding sometime ago formulated a fairly definite idea as to the course which would be followed in connection with the proposed centralization of the authority which now is scattered among the many governmental agencies dealing with Alaska, no final action will be taken until the Executive has been able to acquaint himself personally with details of the situation, most likely through his proposed trip to the territory. Determination has been made, however, that the entire matter of development of the territory's resources must come to a "show-down," and evidences that this point is being approached are seen in the situation surrounding the Alaskan coal fields.

An agreement has been reached whereby the Navy Department is to transfer its activities in connection with development of Alaska coal deposits to the Interior Department, which will work out some plan for the leasing of these deposits to private interests. The Navy, after spending more than \$1,000,000 in this work, feels that the point has been reached where it will be more practical for another branch of the government to take it up. The decision already had been made to close the Navy's mining activities in the Chickaloon field on May 1, and officials hope that the plan for transferring authority over these fields may be put into effect before that time in order to prevent stopping the operations, which would entail losses. Congressional action may be necessary to effect the transfer, but officials declare this can be secured before May 1.

Following the transfer, the Interior Department will be confronted by legal issues rising out of its intentions to lease the coal lands to private capital. Some of the

deposits are located on government reserves and there is some question as to whether Congressional action, an Executive order by the President or some other means will be necessary to open up these particular deposits to business enterprises.

It is understood that consideration has been given to a plan which would call for a fund to be given the Department of the Interior by Congress for the purpose of administration and further development of the fields until such time as the private capital can find the situation sufficiently cleared to take hold on

its own initiative and operate the mines without governmental aid, the cost of development work being cleared off the government's books through outright sales or leasing royalties.

Legislation now pending before Congress would provide a system under which the government would develop the Alaskan resources by means of a revolving fund, after which they would be sold or leased for long periods to private capital. In announcing this plan, Secretary Fall is quoted as saying:

"If I can get the legislation through Congress, I propose to have a revolving fund created with which to develop the immense resources of Alaska.

Oil wells, copper smelters, etc., will be developed and run by this department until it is assured they are strong enough to live without government aid. At that time they will be sold, or leased for long periods, to private capital. I am perfectly sincere in this.

"Capital will not go into Alaska with the prospect of getting only a normal return of its investment. Under present regulations individuals who have the means of developing the country are prevented from placing their money there because of red tape and restrictions. It is therefore necessary to permit an agency of the government to do the prospecting."

Secretary Fall points out that there were 10,000 fewer people in Alaska in 1920 than in 1910, according to census figures. This loss in population will be increased when work on the government railroad is completed and an additional exodus takes place, as those who have been employed on the road leave for "the states." If this waning of Alaska's industry and prosperity is not to continue, the Secretary says, special legislation must be enacted authorizing larger concessions to capitalists or the development of natural resources by the government. The legislation now before Congress makes use of both these plans, providing that the government initiate the



LOOKS LIKE A CASE OF CONSERVATION RICKETS

development and continue it until it has reached the point where commercial operations are possible, when it would be sold or leased to private capital.

Speaking in general terms of the situation, Secretary Fall is reported as saying:

"It is my firm conviction that it will be necessary for Congress either to liberalize the laws to the end that private capital may be invited, with an opportunity to earn sufficient rewards to justify taking a gambler's chance, or, in lieu thereof, provide a revolving fund to be used by some department of the government in sinking experimental oil wells, and in prospecting for other mineral deposits. The result would be to enable us to operate under the second provision of the leasing act, and to sell, or lease the lands in oil fields, coal fields, shale fields, potash, etc. In other words, either capital must have the speculative chance, or the risks of prospecting must be borne by the government.

"NO INDICATION OF BAD RESULTS"

"There is no indication that this would lead to illegitimate acts. There is no reason to believe that bloated corporations and predatory interests would profit by this plan. The operations that are necessary for the development of natural resources are too large for individual prospectors. Either the government must take the risk or it must give private capital a chance to make larger profits."

Referring to a retaliatory bill introduced in Congress placing the public domain, now in the Department of Interior, under the administration of the Forest Service, Secretary Fall said in this event it would be necessary to transfer other bureaus. Among those that would be effected, he said, are the Land Office, Geological Survey, and the Bureau of Mines. In view of the weak condition in which this would leave the Department of Interior, Secretary Fall does not believe this will be done.

NORTHWEST MINING MEN'S VIEWS

Criticizing what he regards as a duplication of work, Secretary Fall said, "It is a question whether the Forestry Bureau, which deals only with public lands withdrawn for forestry purposes, should handle all of the matters with reference to public lands, or whether the other bureaus should be allowed to cooperate with the Forest Service and avoid unnecessary conflicts. The Land Office in the Interior Department has jurisdiction over the mines and homestead entries on forestry lands. The Forest Service is in the other department. If the Forest Service were here it would have access to all the information in each of the bureaus, and would co-ordinate without much difficulty—they would if I were here as Secretary. But so long as it is in another department the information must be exchanged from one department to another. In making surveys they won't accept our surveys of homesteads, or oil claims or mining claims. They must duplicate our surveys. That is duplication of every kind."

Implementation of the bills now before Congress proposing coordination of the bureaus of the government dealing with Alaska is the keynote of a resolution adopted at the annual convention of the Northwest Mining Association, recently held at Spokane. The text of the resolution, which presents the viewpoint held by the mining men of the Northwest upon the subject follows:

WHEREAS, the last census shows that Alaska lost one-fourth of her white population during that decade while the

Government was building a fifty-million-dollar railroad in the territory, and in that connection it is noted that Alaska is still importing from British Columbia the great bulk of the coal used in the territory, although the United States Geological Survey reports that Alaska coal fields contain several billion tons of coal of superior quality well distributed throughout the territory; that, although the only patented oil claim in Alaska, perfected before the oil land withdrawal of 1909, has ever since been a profitable producer of high-grade oil, Alaska is still buying California fuel oil at great cost for the operation of her ships and principal mines and railway; that, although the forest service estimates that Alaska forests can furnish one-third of all the news print paper used in the United States, none is manufactured there, and the Alaska newspapers are paying from 1 to 5 cents a pound in freight charges alone on paper shipped in from British Columbia, while over-mature pulp timber is rotting in the Alaska forests; that the Alaska coal leasing law, passed in 1914, has, after more than seven years' trial, proven impractical and a positive bar to coal mine development; that the oil leasing law, after two years' trial, as yet promises no definite results; that so far it has been impossible to interest the necessary capital in paper manufacture upon the timber sales contract offered by the Government; that the salmon fisheries of Alaska, undoubtedly the richest fisheries in the world, are being depleted under the incompetent management of a Government bureau in Washington, more than 4,000 miles away, while the Alaska legislature has no power whatever to protect that great resource; that Alaska is autocratically governed, as to its natural resources, by thirty-eight federal bureaus with conflicting and interlocking powers, all directed from Washington, and in most cases by men who have little or no knowledge of Alaska, which bureaus are responsible to seven different cabinet officers, and are in no manner coordinated to work in harmony, but, on the contrary, are in many cases jealous of each other's authority, all of which results in most interminable confusion, endless red tape and forbidding delays; and

WHEREAS, the effect of all of this has been to drive from Alaska to more attractive fields the small pioneer operator, upon whom real pioneer development always depends, and the tendency is more and more each year to a monopoly of the rich resources by large corporate interests with ample capital, who are familiar with such resources and financially equipped to take advantage of the same, without that Government encouragement so necessary to the small pioneer operators; and

WHEREAS, these conditions in Alaska result entirely from the radical change in that liberal public land policy which gave the United States the greatest development in history through the individual effort and initiative of its pioneer citizens; that this change was prompted by a misguided policy of so-called conservation which sought to prevent the domination of Alaskan resources by large interests, but its results thus far have tended and now tend to a greater monopoly by large interests in Alaska than was ever known in the development of the state, and which bids fair, if continued, to place each large resource of Alaska in a monopoly similar to that enjoyed in the last century by the Hudson's Bay Company and the Russian-America Company.

Therefore, it is by the Northwest Mining Association at its annual convention unanimously

RESOLVED, That we heartily indorse in principle the proposal made by the Secretary of the Interior and the Governor of Alaska and their several predecessors, and embodied in bills introduced in Congress by Chairman Curry of the House Committee on Territories and by Senator New, chairman of the Senate Committee on Territories, to the end that the several bureaus in Washington having to deal with the natural resources of Alaska be coordinated and united, in so far as their Alaska activities are concerned, under one responsible head, preferably the Secretary of the Interior, with an authorized representative resident in Alaska; and we also urge early legislation by the Congress for a return in Alaska to that liberal public land policy which has been so successful in the great West, both in the United States and Canada, by the encouragement it gave to individual initiative and pioneer effort, and by which policy only can Alaska be developed into a land of homes and encouraged by the ties of ownership and personal interest.

METAL MINE FIRE-FIGHTING EQUIPMENT

By WILLIAM CONIBEAR
Inspector Department of Safety, Cleveland Cliffs Iron Co.

THE MEN WHO are in charge of the fire-fighting equipment of metal mines appreciate that the safety of life and property would be more assured if the equipment were standardized and fire-fighters were given a standardized course of training. It is the consensus of opinion, however, that, as the importance of maintaining fire-fighting appliances is not recognized by many operators, there is more urgent need at the present time to direct effort to overcome the apparent indifference to provide adequate equipment than to attempt standardization.

The amount of fire-fighting equipment that should be maintained at the average metal mine is not so extensive that the costs of purchase and annual maintenance are prohibitive, even for a small mine; nor should much difficulty be encountered in reaching an agreement upon standardization within reasonable limits. Because many mines have been worked for years without having a mine fire, a feeling of complacency as to the danger of fire underground often exists in the minds of the operators, although their feelings are exactly the opposite in regard to the fire risks of residences, business blocks, etc. Fire-proof construction in the shafts, shaft stations, pump houses and main haulage drifts of a modern mine also tends to strengthen this feeling of security, and the annual expenditure that is necessary to maintain equipment and trained men may be thought by some to represent a higher insurance rate than is justified by the danger involved, and thus account for the lack of preparedness which prevails at many mines.

Underground fire hazard can be partly reduced by fire-proof construction, but any small quantity of combustible material, if ignited, may cause the loss of many lives and much property, and few indeed are the mines that are always entirely free from this danger. Then, too, the fact that ore-deposits at shallow depths are disappearing and that deep mines are being developed increases danger from fire. Great depth usually causes a crushing of the rock associated with the ore, which in many mines demands a large quantity of timber, and in others may be the origin of fire, due to the presence of combustible material or elements, which are ignited by the heat generated by the crumbling and crushing of the rock. In deep mines a rapid exit to surface by climbing is not possible, and the miners' lives may depend upon the time it takes to hoist all underground employes to surface. It is therefore reasonable to assert that a mine operator has not done everything in his power to make his mine safe, if he has neglected to provide fire-fighting appliances. Surely in these days

of nation-wide effort to avoid injury and death no operator can afford to risk having a favorable accident record of many years spoiled by a heavy loss of life and property, such as might result in a few hours if a fire should occur and no fire-fighting equipment had been provided to meet the emergency.

When fire breaks out in a mine and men are known to be in danger, an attempt is made immediately to get them to a place of safety, and rescue crews must enter a danger zone, the limits of which probably are not known. When this disaster occurs, there should be readily available self-contained oxygen apparatus and

crews of trained men, for these are most valuable when fire is first discovered, and it is then that the most effective work can be accomplished in saving life and in extinguishing or sealing off a fire near its origin. This apparatus is an essential part of mine fire-fighting equipment, because without it the irrespirable gases formed by mine fires cannot be safely penetrated.

A fire-fighting squad, entering a mine, should consist of five members. To equip such a crew and also to be in a position to use the apparatus until accessories can be obtained from elsewhere, it is necessary to have the following appliances.

- 5 sets of oxygen rescue apparatus;
- 5 extra cylinders for the same;
- 5 portable electric lamps;
- 4 or more large cylinders of oxygen;
- 1 high-pressure pump for loading small cylinders;
- A supply of caustic soda;
- Extra goggles, rubber parts, etc.



WILLIAM CONIBEAR

To provide a mine rescue station with this equipment costs approximately \$2,200, basing the estimate on 1920 prices of one type of apparatus, which is fairly representative of the average price of the various types of machines now being used.

Fire-fighters must train at regular and frequent intervals if they are to be efficient. One metal mining company, that has had twenty-five sets of apparatus since 1911, requires at each of its mines monthly a four-hour practice of five men consisting of two hours of work in smoke or noxious atmospheres and two hours of study of apparatus and special instruction. The cost of oxygen and potash and the wages of the men, exclusive of instructor, amount to about \$15 monthly for a crew of five men. The average annual cost of keeping apparatus in good condition for ten years has been \$10 per machine. A mine rescue station of five sets of apparatus and accessories and trained men can be main-

tained, therefore, at an annual cost of \$230. If a safety engineer is not employed to supervise the instruction of the men and to look after the equipment, these duties may be delegated either to the mining engineer or the mine mechanic, as supplementary to his regular work.

Chemical fire extinguishers can be used effectively in attacking a fire in an incipient stage, and to meet this condition it is essential that they be kept at the shaft collar, in shaft stations, pump-rooms and in dry, timbered drifts, distant from the shaft. Recent experiments made by the Bureau of Mines have proven that care must be observed in using extinguishers of the carbon tetrachloride type, as the liquids, when applied to fire, produce poisonous gases, which may be dangerous, if held in closely confined spaces, where the user cannot escape breathing the fumes.

WATER SUPPLY

When fire has made fair progress in penetrating a timber gob, a supply of water under pressure is usually found to be the best equipment for a successful fight. It can be obtained by converting the air line into a water line, either by tapping the discharge column, if water is pumped to surface, or by connecting it with the surface supply of water. A stop-valve should be put in the air line at each plat, in order to direct the flow of water where it may be needed, and safety-valves should be also installed to take care of the excess pressure that may exist, and thus avoid a possible break in the air line. In a mine where water is used in the operation of rock-drills, a supply of water is furnished. If these sources of supply do not exist, a large water tank, mounted on a truck, together with a reel of small hose and pipe fittings to connect with the air-line for pressure, will be found valuable appliances. Hose and accessories should also be kept underground, the amount depending entirely upon the conditions existing in the mine, such as the number of levels, distance between levels, location of water-line, etc.

CONTROL OF VENTILATION

Most mines have two or more outlets to surface and control of the air currents can be governed by the use of doors and fans. In dry, heavily timbered mines the volume of air and the direction in which it travels are of great importance, as affecting the conditions under which fire-fighters must work. Many miners depend on natural ventilation for supplying air underground and the direction of the air-current varies with atmospheric changes, depending upon the season of the year. If the main working shaft of a mine is downcast, in the event of a fire underground, the miners can retreat to shaft stations into good air and fire-fighters can approach the fire zone most advantageously. Fire doors should be placed at shaft stations, on different levels, and at other suitable points, and mechanical ventilation should be provided, so that the continuity of the air current in a definite direction can be assured. Unless an exigency arising by fire demands it, and then only when it is known that life will not be endangered, the direction of the air-current should not be changed.

These fire-fighting appliances are applicable to practically all metal mines, and are suggested as the minimum amount to be considered essential for the average mine, but they are not sufficient to meet the extraordinary fire hazards that exist in some mines. An estimate of the cost for furnishing water, hose and ventilating appliances is not given, as they will vary according to the size of the mine, source of water supply, number of openings to surface, etc.

The manufacturers of the principal types of oxygen

apparatus now used in this country have been striving to produce safe and efficient machines, and in this work they have been given valuable assistance by the U. S. Bureau of Mines. The various types have been developed along similar lines with respect to the main features, which include a breathing bag, a steel cylinder for oxygen and a retainer for holding an alkali to absorb carbon dioxide. The assembly of parts that go into one type of apparatus results in a form that is very dissimilar to the form of another type; for instance, in one type the wearer must carry the breathing bag upon his chest, and in another type it is worn upon his back, which is but one illustration of this disparity. As a consequence of numerous other inequalities in the details of construction, it is impossible to transfer the parts of one type to another, and even more important is the fact that it is not advisable to send a man equipped into a fire zone with apparatus that bears little resemblance to the one he wore when he was trained and qualified as a rescue man. To cope successfully with the perils that have been met in fighting underground fires each member of a rescue crew must conform to the highest standard of efficiency possible, and it is obvious that if one or more members fail to qualify, because of physical disability, mental inaptitude, or lack of familiarity with the mechanism of the apparatus, then the effectiveness of the crew as a fire-fighting unit is demoralized, and the probability is that its usefulness will be entirely destroyed.

APPEAL NEVER UNHEEDED

When life and property are endangered by fire, regardless of what mine it may occur in, even though no preparation has been made by the operator to meet the exigency, an appeal for assistance is never unheeded. But there is no excuse for a mine operator not to have in his employ trained rescue men to work in conjunction with men from other mines, if for no other reason than the fact that men, who know the workings of a mine, will be found invaluable in rescue work to men entering the mine for the first time. Every mine operator is given an opportunity at reasonable intervals to have a number of his employes trained in mine rescue work under the direction of the Bureau of Mines, which maintains ten rescue cars, five rescue trucks, and eight safety stations, equipped with 300 or more complete sets of apparatus and distributed throughout the mining districts of the United States. If oxygen rescue apparatus were standardized to the extent that rescue men, who had been given a standard course of training, could use the various types without unlike minor features being detrimental to safe and efficient work, the advantage would be that the entire equipment and all the trained men of a district would be available as fighting units for each and every mine in that district. It is true that many large companies have sufficient equipment and organized crews to fight successfully underground fires without help from other operators; but the industry would sustain less loss, when trained men go from one mine to another, if equipment and training had been standardized.

MENACE IN CONNECTING MINES

It is not an unusual condition to find different companies operating contiguous mines, in which there are underground connections, either through drifts or stopes, or by a subsidence of the surface at their boundary line. A fire in one mine is a menace to the other and, though it should fail to extend across the boundary, a large volume of smoke and gas penetrating into its levels and stopes would carry danger and cause cessation

of work. Unpreparedness to fight fire in one mine increases the fire hazards of both mines, but life and property are safer, if each is equipped with standard fire-fighting appliances. The situation then becomes similar to that existing in a large mine, which has two or more hoisting shafts and is amply equipped successfully to fight an underground fire.

A large company possessing mines, that are either grouped in close proximity or scattered over a wide territory, finds it expedient to use standard-size skip and cage compartments, standard cars, track gage, etc. They represent economy in the maintenance of equipment and efficiency in mine operations, and for the same reasons it is desirable to standardize mine fire-fighting appliances. Furthermore, there is an additional incentive, which should appeal alike to the operator of a small mine and to the operator of many mines, namely, an opportunity for united effort to provide greater security for men who often are unable to help themselves in time of fire. No stronger argument can be advanced for recommending the standardization of fire-fighting appliances than its humanitarian value, which is worthy of the serious consideration of all who are responsible in any way for the safety of the men working in the mines.

ACCIDENT RATES FOR MINERAL INDUSTRIES

THE SAFEST branch of the varied mineral industries in which to work would appear to be the sandstone and bluestone quarries, according to data of the comparative accident rates for all divisions of these industries compiled by the United States Bureau of Mines for the year 1920. The lowest fatality rate was found to be for this class of quarries, which employ a relatively small number of men and in which all work is done in daylight, free from many dangers that are inherent in underground mining. For the same year, the highest fatality rate was that for gold, silver, and miscellaneous metal mines, a group that includes all metal mines except those producing copper and iron and those in the Mississippi Valley that produce lead and zinc.

No reports of non-fatal accidents at coal mines are received by the Bureau of Mines, but for all other branches of the mineral industry the highest injury rate was that for the lead and zinc mines of the Mississippi Valley, while the lowest was that for marble quarries.

Since the enactment of compensation laws by nearly all of the states, increased importance attaches to the accuracy and completeness of the statistical publications on industrial accidents. The insurance premiums that operators of metallurgical plants, mines, and quarries have to pay are determined largely from a study of statistical reports relating to accidents in these industries. It is highly advisable, therefore, that full and accurate data concerning accidents be reported promptly by operators, not only to aid in the study and prevention of such accidents, but also to assist state compensation commissions and other insurance bodies in establishing premium rates that will be fair and equitable.

As the practical usefulness of statistical reports are increased or diminished by the promptness or tardiness with which the figures are published, the Bureau of Mines hopes that its annual inquiries relating to accidents may be filled out by all operators and returned promptly, in order that the value of the reports of the Bureau on this subject may not be diminished by any unnecessary delay in their publication.

CONSTRUCTIVE COMMENT ON STANDARDIZATION IN THE MINING INDUSTRY

THE AMERICAN MINING CONGRESS in connection with its work on the standardization of mining methods, practice and equipment and in conjunction with a series of articles which are appearing monthly in the MINING CONGRESS JOURNAL announces that it will be glad to receive from readers of the Journal short comments, suggestions or criticisms on the work of the Standardization Division.

This correspondence will be published monthly in these columns, a portion of the publication being devoted exclusively to this comment. Members of the national organization are requested to address their communications direct to the headquarters, Munsey Building, Washington, D. C.

Two communications are presented this month, bearing comments upon the article by William Daly, chairman of the committee on underground transportation standardization of the Standardization Division, which appeared in the March issue of the MINING CONGRESS JOURNAL.

P. G. Beckett Points to Dangers Of Overstandardization

The following comment on Mr. Daly's article is made by P. G. Beckett, general manager, Phelps Dodge Corporation:

MR. DALY'S instructive paper on "Standardizing Underground Transportation in Metal Mines" calls attention to the endless variety in design of transportation equipment and practice.

Standardization must be looked at in a broad way, as there are dangers in over-standardization just as there are in under-standardization.

The whole question appears to be largely one of eliminating wasteful practices and eccentricities; standardizing equipment and certain methods in each mine or group of mines under one management; the avoidance of expense connected with unnecessarily numerous and complicated types; the promotion of competition in the manufacture of certain designs and the reduction in cost of manufacturing and operation.

In other words, good practice under differing conditions rather than general metal mine standardization.

No doubt the present American Mining Congress investigation into Metal Mine Standardization will develop standard methods and equipment that will typify good mining practice under different conditions and permit a new mine starting operations, and an old one wishing to change, to benefit by the experience of others. In this lies the apparent advantages of the movement rather than in the hope of universal standardization in the metal mines now being worked.

And while the benefit of restricting types so far as differing mine conditions will permit is quite apparent, it must be kept in mind that a change in one detail of construction will result in many others.

The track gage affects car and locomotive design, the size of the drift and even that of the cage and shaft. The question must be taken up as a whole and not piecemeal.

The most suitable track grade and the proper size of a car for hand-tramming can be determined by experiment with scales to measure car and track resistance. The hand-trammed car should be as large as one man can handle effectively. Except in her extraordinary conditions, two men should not be required. They should have roller-bearing axles or wheels, and should be built as lightly as possible,

although of rugged construction. Any weight subtracted from the car can be added to the effective load.

Cast steel wheels of special material instead of cast iron may reduce the weight of the car from 80 to 100 pounds. Simplicity of design is important, as the latches, hinges, turnbuckles and other details cause a large part of the repairs.

Within limits of a few inches, the height of the cars is not of controlling importance. In few mines are more than 15 percent to 20 percent of the cars filled by hand-shoveling and even then it is possible that the advantage of a very low car is over-estimated.

It is often found convenient to haul hand-trammed cars in a train that a car dumping to one side, which does not have to be uncoupled at the chute, is preferable. In this case, the track gauge affects the dumping angle.

A wider range in capacity is permissible in a car for strictly power haulage. The weight and cost per ton of capacity is less in larger cars and certain operating costs are often reduced as well. The size is limited by the section of the drifts and curvature of the track. There is a need for at least two sizes—the smaller would be used where the traffic is not dense when it would not pay to drive very large headings to accommodate large cars.

It may not be advisable to fix upon one car between 2½ and 5 tons in capacity, but at any rate, the design can be so standardized that there will be less variety in construction, which will reduce construction costs.

The larger sizes up to ten tons or even more are only needed when great quantities of material are to be transported, and greater expense for installation is justified. Such cars approach steel railway construction in design.

For the same reasons, two sizes of locomotives may be found necessary, although in particular cases, two or even three small locomotives may be connected together and operated by a single control. By limiting track gauges to two, locomotive design will be greatly simplified. Storage battery locomotives for gathering or other miscellaneous work have great possibilities and deserve attention. They may be constructed so that various types of batteries can be used without change of design.

The weight of rail and spacing of ties is dependent upon the moving load and the character of ballast. A lighter rail and wider spacing of ties is permissible when the track is well drained and the ballast material good. The principles which have been established by experience in railway service may be drawn on in proportioning rails and ties. They can easily be made applicable to mine work. All rails of the same weight should have standard punching and it would be very convenient if special sections could be adopted which would also standardize coupling bars and bolts.

George E. Collins Cites Factors Which Must Be Considered

The light of a long experience in handling mining problems is embodied in the following comments on underground transportation standardization, made by George E. Collins, mining engineer, Denver, Colo., Governor, Colorado Chapter, American Mining Congress for the Colorado:

I DO NOT think it is possible, or desirable, to adopt a single type of car for underground hand-tramming, for it may be possible to use a counting car where the roof is necessarily low, and a long narrow car for narrow veins, in which the nature of the walls makes it undesirable to break them. Moreover, the car must be varied according to the width of dumping, i. e., by hand, tippie, etc. Hand-trammed cars, if to be run in cages, must be short, and if to be trammed through narrow drifts long in relation to capacity.

Nevertheless, the present diversity of gauge and capacity is unnecessarily great and should be reduced. The design of the car often depends on the material most cheaply available in the vicinity. For a given size of tie and weight of rail, the spacing of the ties should be standardized. Many of the features mentioned by Mr. Daly seem to me too far from the standard of drifts car, but be standardized, except the nature of the deposit; but I can see no valid reason for diversity of grade.

It should be possible to come nearer to a single standard in certain cases, for where the nature or capacity of a mine requires a certain hauling, the limiting conditions are more mechanical rather than those set by mining requirements. The design of car and, however, depend on the dumping method, whether by hand, or bottom, or rotary dump.

Weight of cars, of course, must vary with the load

and therefore with the tonnage to be hauled. But there does not seem to be any necessity for so many different sizes.

I confess to some surprise at the number of different grades Mr. Daly finds in use. When I was a boy (in England), I remember being told that ½ inch per fm. (say 0.7 percent) was the proper grade for hand tramming; and ½ percent for tramming by horse. My impression is that these were nearly universal at that time.

PERMANENT CONCILIATOR FOR COAL LABOR TROUBLES MAY BE NAMED

OUT OF the unsettled labor conditions of the coal industry will likely arise a plan under which a specialist in coal labor matters will hold a permanent place in the Bureau of Conciliation of the Department of Labor. This would be a certainty had Congress granted the bureau funds equal to its estimates for the coming year. It is believed, however, that even with the curtailed appropriations, Secretary Davis will appoint two or three labor specialists for as many of the major industries, one of which, and probably the first, will be the coal industry. In this event it is highly probable that Hymel Davis, who has been handling the coal situation under the supervision of the Secretary, will be appointed to the post of permanent labor conciliator for the coal industry.

The bureau asked Congress to appropriate \$250,000 for its work during the coming fiscal year. This amount would have permitted the appointment of at least twelve key men to follow the labor affairs of as many basic industries. Appropriations of only \$175,000 were granted the bureau, however, and the Secretary's plan must be curtailed in accordance. It is stated that the bureau can afford to give up a small amount of this for the special conciliatory work, however, since expenditures under the present machinery are not likely to amount above \$150,000 during the coming fiscal year.

In discussing the plan, Secretary Davis declared that the Department is "going to go ahead and build up this proposition. If the government had a key man, whose business it was to follow the coal industry the year around and know everything that is going on in the coal field, we would know just how to handle a situation such as has come before us in the several weeks preceding expiration of the coal wage agreements this year," he said.

"If you had thirty-two key men in the thirty-two basic industries, such as coal, transportation, textiles, and so on, you would know just what to do in case of threatened industrial conflict.

"Instead of having a government commission to handle all labor disputes, you would have this group of thirty-two key men forming such a commission. If you wanted a board to take up the coal situation, you would have the coal man as chairman. If it were a commission of three, the transportation and textile men might be the other two. You could expand the board to include as many men as you wanted, up to the total number of specialized conciliators.

"The President has approved my idea of naming these key men, and with the funds that Congress has appropriated we are going ahead with the first phases of the plan."

Tax Ruling—The Bureau of Internal Revenue has granted to domestic corporations an extension of time to and including June 15, 1922, in which to file returns for the fiscal year ended January 31, 1922, and the fiscal year ending February 28, 1922. This extension is conditional upon the filing of tentative returns in the two latter cases before April 15 and May 15, respectively.

ORGANIZATION OF LOCAL CHAPTERS TO INCREASE SAFETY IN MINING OPERATIONS

HERALDED as one of the greatest single steps made in the history of the mining industry of the United States toward securing general interest among miners in first-aid and safety work, organization of a local chapter system of the Joseph A. Holmes Safety Association was effected when members of that body met in Washington, March 6, to receive the report of the committee which has been engaged since last October in drafting a plan for forming branches of the parent organization in hundreds of mining camps throughout the country.

The suggestions of the committee, approved in their entirety by the meeting, provide a means for perpetuating the work of the Bureau of Mines in first-aid and mine-rescue instruction, and furnish, in each chapter to be established, a vehicle for further and more intensive instruction beyond that which the traveling representatives of the Bureau of Mines are able to offer.

The chapters will be organized in mining communities through the assistance of Bureau of Mines employes who, after they have finished their regular training work in such communities, will initiate the formation of the chapters, lending their assistance to further organization work. Present existing local safety societies, of which the Bureau has a list of 75 or more, are to be solicited to become member chapters of the association.

The organization plans are expected to result in the establishment of several hundred chapters during the coming year. Officials in charge of the work expect that by the time of the next annual meeting of the association a tangible conception shall be available as to future possibilities of expansion in number of chapters and as to value of their work.

One of the most important activities to be undertaken by the individual chapters will be the first-aid classes to be organized for the purpose of training members who have not completed the course of first-aid instruction set forth in the Bureau of Mines manual. For those who have completed this course, classes are to be organized for regular additional practice in first aid, as will also classes in mine rescue where breathing apparatus and facilities are available. Such training and retraining ordinarily will be done under the direction of the mining company owning the apparatus.

Accident prevention and improvement of health conditions are to be sought through the following means:

1. Study at chapter meetings and in homes of miners of safety and health data circularized by governmental agencies.
2. Study of data submitted by local chapters to the Holmes Association and thence redistributed for the benefit of all chapters.
3. Exhibition at chapter meeting of suitable films distributed by the Bureau of Mines, U. S. Public Health Service, American Red Cross, etc.
4. Lectures relating to accident prevention and health

by safety and educational directors of the chapter and other authorities, with such lectures to be supplemented by addresses by traveling representatives of the association if such action is warranted by sufficient growth of the organization.

5. Study for the purpose of acquiring familiarity with provisions of state and community laws and ordinances relating to health and safety in mines.

Promotion of educational activities is to be sought through the agencies utilized for safety and health instruction, and also through cooperation with federal, state and local vocational agencies. The educational work will include furnishing of knowledge of the properties and detection of mine gases, mine ventilation and timbering, as well as other mining principles with relation to safe and dangerous mining practices.

It is planned to make the dues to the association from the local chapters as small a burden as possible, commensurate with service to be rendered to chapters. The committee's recommendation in this respect are that a charter fee of \$10 be charged all chapters. Quarterly dues for chapters having 25 members or less are to be \$2.50. Chapters having more than 25 members are to pay an additional \$1.25 quarterly for each additional 25 members or major fraction thereof with a maximum \$25 quarterly. Chapters organized before the March, 1923, annual meeting

of the Holmes Association are to have a remission of annual dues for the year March, 1922, to March, 1923.

The committee gave detailed consideration to avoidance of any duplication by chapters of mine safety work of organizations now working in the mine safety field. Those in charge believe that under the adopted plan of organization and constitution there will be no real duplication of the present work of the National Safety Council, American Red Cross, U. S. Bureau of Mines, American Mining Congress, American Museum of Safety, State Mine Inspection Services, insurance companies, or of mining companies.

Wherever such organization as the National Safety Council of the American Red Cross have acted, local sections in a community devoting attention to accident prevention and betterment of health conditions in a community, a local chapter of the Holmes Association would interest only the members of such organizations who are interested in safety in mining and metallurgical operation. Membership by such persons in both organizations will promote cooperative work between the two and therefore contribute to the successful operation of each, say those in charge.

Prior to actual assembling of the committee such information was gathered in efforts to secure an idea of how the chapter plan was viewed by the mining public



Practical instruction in mine rescue and first aid methods will form the chief activity of local chapters of the Joseph A. Holmes Safety Association which are to be organized under a broad plan recently adopted

and particularly by various unattached safety societies now existing in mining communities. Information thus obtained showed conclusively that the general reaction throughout the mining industry is highly favorable.

Actual organization of chapters has not yet been started, as the committee felt that a definite plan of operation should be formulated and presented to the association before this was attempted. The Bureau of Mines is now ready to issue instructions to its ten safety stations and ten safety cars throughout the United States to actively promote the organization of chapters in communities with which they come in contact, with due care being taken not to encourage the formation of a chapter in any community unless there is reasonable prospects through the support of miners, mine operators and others of maintaining a successful chapter.

The association's local safety chapter committee is composed of the following members: J. W. Reed, representing the association as a whole; B. F. Tillson, National Safety Council; James Lord, United Mine Workers' of America; J. F. Callbreath, American Mining Congress; J. D. Morrow, National Coal Operators' Association, and F. J. Bailey, the Bureau of Mines.

Approval has been given by the association to the committee recommendations proposing that medals of honor be awarded to five men who especially distinguished themselves by bravery in rescue work following mine disasters. More than forty such awards have been made by the association since its organization.

W. H. Martin was awarded the medal for his efforts to save a fellow workman after an explosion in the Parrish mine of the Railway Fuel Company, Parrish, Ala., November 23, 1920.

A. W. Spring, who never before had been in a mine until he went underground to establish a first-aid station following an explosion in the North mine of the Franklin Coal & Coke Company, Royalton, Ill., October 27, 1914, was awarded the medal in recognition of his services which were deemed directly responsible for the saving of several lives.

James Murphy, Girard, Kansas, and William Anderson, Frontenac, Kansas, each have received the award for their work in a mine of the Jackson-Walker Coal & Mining Company, November 2, 1918, when they worked in the afterdamp and saved the lives of four air-trapped miners.

A posthumous award was made in the case of James Hudson, who lost his life in efforts to save a fellow workman following an explosion in the Black Diamond No. 2 mine of the Pacific Coast Coal Company, Black Diamond, Washington, July 20, 1920.

BUREAU OF MINES officials recently were acquainted with a unique example of the value of first aid treatment instruction which that agency plans to carry forward more extensively than ever before in cooperation with the proposed local chapters of the Joseph A. Holmes Safety Association.

Knowledge of first-aid methods obtained from his father, who was instructed by field representatives of the Bureau of Mines, enabled Howard Henry, eleven years old, of Belleville, Ill., to save the life of his younger brother, when the latter was struck by a train on the Illinois Central tracks near their home. The boy's arm was badly crushed. Howard carried him to a nearby house and directed a neighbor in the making and application of a tourniquet.

OIL AND GAS ROYALTIES IN 1921 TOTALED TWO MILLION DOLLARS

ROYALTIES accruing from the production of oil and gas on government-owned lands in the West under the terms of the Leasing Act of February 25, 1920, brought over two million dollars into the United States Treasury in the calendar year 1921, states A. W. Ambrose, chief petroleum technologist of the Bureau of Mines, in his annual report to the director of the Bureau. More than 6,000 permits for prospecting for oil and gas have been issued by the General Land Office, while 267 leases have been granted for producing oil and gas properties.

A statistical statement, summarizing the result of approximately 80 percent of all reports of production in 1921, shows a total of 8,641,159 barrels of oil produced on government-owned lands. Of this, 5,113,073 barrels are credited to Wyoming; 2,923,592 to California; 600,153 to Montana; and 4,340 to Louisiana. Production of natural gas amounted to 3,856,618,000 cubic feet, of which 3,665,036,000 is credited to Wyoming and 191,582,000 to California. Casinghead gasoline production amounted to 1,918,722 gallons, Wyoming producing 1,457,177 gallons and California 344,929 gallons.

The government receives royalties on all petroleum and natural gas and their products sold from government lands. The minimum oil royalty rate of 5 percent is that for land leased as a reward for discovery. Most of the leases have been awarded under a sliding scale of royalties ranging from 12½ to 25 percent. Natural gas royalties charged by the government range from 12½ to 16 2/3 percent. The rate on casinghead gasoline is 16 2/3 percent of the value of the gasoline extracted from the gas produced and sold.

Under the terms of the Leasing Act, the supervision of coal, oil shale, sodium, phosphate and oil and gas developing operations on the public lands is entrusted to the Bureau of Mines. Oil and gas operations constitute by far the greatest part of the Bureau's activities in this connection. Offices for the conduct of this work have been established at Denver, Colo.; Casper and Salt Creek, Wyo.; Bakersfield and Taft, Calif.; Winnett, Mont.; and Shreveport, La. The supervision of development work on lands within the Naval Petroleum Reserves in California is included in the Bureau's activities.

POLICY ON SHALE ASSESSMENT WORK

ASSESSMENT WORK on oil shale claims is necessary if a patent is to be held, according to the announced policy of the Department of the Interior which puts to rest reports that the work was not essential to maintenance of such a title. This policy is outlined in a recent communication written by William Spry, Commissioner of the General Land Office. Quoting the leasing act to show that deposits of oil shale are specifically mentioned as coming under the provisions for assessment work, he adds:

"Failure to perform the annual assessment work upon an oil shale placer, otherwise valid, would constitute a non-compliance with the mining laws, and the lands within such claim would become public lands, but, in case of an adverse claimant, the leasing act would intervene, and render the lands and the deposits occurring thereon, subject to its provisions, so that the original locator could not cure the effects of the failure to perform the annual assessment work by resumption of the work, and should patent proceedings be instituted for a claim so forfeited, it would be the duty of the department to deny patent therefor."

A FEW SIDELIGHTS ON THE FEDERAL TAX ADMINISTRATION

By MCK. W. KRIEGH

THE TASK of functioning under the Revenue Act of 1921 is no easy one for the Bureau of Internal Revenue. In the administration of the new law, and in the disposition of cases which have accumulated under previous laws, many difficult problems have to be solved. The new regulations (Regulations 62), just published, do not afford substantial relief from the intricate procedure which heretofore has prevented prompt determination of tax liability and early settlement of war-time cases. Instead, the Bureau must interpret and enforce many new provisions of law, and the taxpayer must burden his already overtaxed memory with additional rules and regulations which must be observed in making returns of income to the Federal government and in securing proper consideration of any claim which may arise in the adjustment of his taxes.

PREVIOUS LAWS COMPLICATED

Previous revenue laws were complicated, and the present law affords no substantial simplification, although several groping steps were taken in the right direction. Where a law is complicated, its administration is certain to involve difficulties. To meet the difficulties presented in the administration of the Federal income and excess profits tax provisions of the law, the Commissioner of Internal Revenue has endeavored to develop in his department experts or specialists in each branch of industrial activity and its subdivisions in order to assure taxpayers of proper consideration and at the same time to guard the government against imposition.

Important changes have been made under the 1921 law in the rules relating to refund of overpayments and to additional assessments on account of underpayments. The law terms an additional assessment a "deficiency," and prescribes the method of procedure, both for the government and the taxpayer, where deficiencies are discovered. The rule fixing the time for payment of taxes is unchanged; but under the 1921 law interest on deficiencies begins to run at the rate of 6 percent per annum from the time the tax was due instead of attaching thereto upon the expiration of ten days after notice and demand for payment by the collector as under the previous law. However, interest on additional assessments under the 1918 law and prior acts is still computed on the latter basis, as Article 1001, Regulations 62, expressly states that the 6 percent interest as imposed by the 1921 law "does not attach to deficiencies discovered under acts prior thereto." In cases arising under the present law where the time for payment of the tax or any installment thereof is postponed at the request of the taxpayer, interest at the rate of 6 percent per annum is added from the original due date until paid.

CASES OF OVERASSESSMENT

In cases where an overassessment is disclosed through the audit of a return, proper adjustment will be made in the Bureau, a certificate of overassessment will be forwarded to the taxpayer, and the amount of such overassessment, if already paid, will be credited against taxes due under any other return or refunded to the taxpayer. This action will be taken by the Bureau regardless of whether or not a claim has been filed. But a taxpayer should file a claim for refund or credit of any amount

overpaid, where it appears that an error has been made in the return or in the assessment, without awaiting action by the Bureau, for if the claim is disputed, such action on the part of the taxpayer is a prerequisite to a suit or proceeding in the courts for the recovery of any internal revenue tax, penalty, or any other sum alleged to have been erroneously or illegally assessed or collected.

RULING ON INTEREST

Under the 1921 law, interest is now allowable upon the total amount of a refund or credit at the rate of one-half of one percentum per month to the date of the allowance of the claim, as follows: (1) where such amount was paid under protest, interest will be allowed from the time of payment; (2) where paid without protest, but pursuant to an additional assessment, interest will be allowed from time of payment; (3) where paid without protest, and payment was not made pursuant to an additional assessment, interest will be allowed from six months after the filing of the taxpayer's claim. For complete information concerning the application of the interest provisions of the new law, the regulations should be carefully examined.

Under the procedure prescribed by the regulations provided for the administration of the 1918 law and previous laws, when the audit of a return disclosed additional tax liability, the Bureau would make an assessment of the additional tax alleged to be due, the collector would give the taxpayer ten days' notice and demand, and would proceed to collect it, unless the taxpayer, upon receipt of such notice and demand for payment, filed a claim in abatement. In nearly every instance of an additional assessment, claims in abatement, alleging some legal or equitable ground upon which relief should be granted, were filed; and, although the Treasury Department was not required to accept such claims, it being purely a matter of discretion with the collector whether or not a claim in abatement should be given consideration, most of them were accepted and the collection of the additional tax was held up pending determination of the claim. At the present time there are outstanding claims in abatement aggregating more than \$500,000,000.

TO PREVENT ACCUMULATION OF CLAIMS

In order to prevent future accumulation of claims in abatement, and at the same time allow the taxpayer adequate opportunity to be heard, the 1921 law provides that the taxpayer must be given 30 days' notice within which to show cause why an additional assessment should not be made. The Bureau can not levy an assessment until that notice is given; but once that notice has been given, and the taxpayer has been given an opportunity to be heard and to file an appeal, the Bureau can proceed to levy and collect the additional tax, claim in abatement thereafter is barred, and further consideration of the matter must be secured by filing a claim for refund or credit. Apparently, the only exception to this provision of the new law is in a case where the Commissioner believes that the collection of the amount due will be jeopardized by such delay, and in such case he may make the assessment without giving such notice or awaiting the conclusion of such hearing.

Prior to the passage of the Revenue Act of 1921, the

Commissioner had no power to extend the time for payment of any tax, even in cases where the granting of such an extension would have been advantageous to both the government and the taxpayer; but the La Belle Iron Works decision of the Supreme Court of the United States brought forcibly to the attention of Congress the necessity of providing for such extension in cases where it is shown to the satisfaction of the Commissioner that the payment of an additional assessment or deficiency would result in undue hardship to the taxpayer. Following the La Belle decision, which held that appreciation of assets can not be included in invested capital, many companies were called upon to pay deficiencies resulting from the reduction of their invested capital as reported in their returns; and many were seriously crippled because the recent period of depression made it impossible to raise the money for immediate payment. The Commissioner may now, with the approval of the Secretary of the Treasury, grant an extension of time for payment for such period as he may determine, not in excess of 18 months from the passage of the law (November 23, 1921). In such cases interest on the deficiency, in lieu of other interest provided by law, runs at the rate of two-thirds of one percentum per month from the time such extension is granted, except where such other interest provided by law is in excess of interest at the rate of two-thirds of one percentum per month. The extension will be granted only in case the taxpayer establishes to the satisfaction of the Commissioner that without such extension undue hardship will result.

METHOD OF DETERMINATION

Another provision contained in the 1921 law which has attracted considerable attention is that which provides a method whereby a determination by the Commissioner of the amount of tax or penalty due may become finally conclusive upon the making of an agreement to that effect between the taxpayer and the Commissioner with the approval of the Secretary. Such an agreement may be made where the taxpayer has (1) without protest paid in whole any tax or penalty, (2) accepted any abatement, (3) accepted any credit, or (4) accepted any refund, based upon a determination and assessment by the Commissioner. When an agreement has been entered into, the case can not be reopened or the Commissioner's decision modified; and no suit, action, or proceeding to annul, modify, or set aside such determination or assessment shall be entertained by any court of the United States except upon a showing of fraud, fealessance, or misrepresentation of fact materially affecting the case. If the taxpayer is a corporation, the regulations provide that a certified copy of the minutes of the board of directors authorizing an officer or officers of such corporation to enter into such agreement shall be filed with such agreement at the time of the execution thereof. Such agreements must be executed in duplicate, one for the files of the Bureau and one for the taxpayer.

Under the provisions of the present law, suit for the recovery of taxes or penalties can not be maintained until a claim for refund or credit has been made, and six months have elapsed from the filing of such claim, unless a decision thereon has been rendered within six months, in which case suit may be brought upon the rendition of the decision. Suit can not be brought after the expiration of five years from the date of the payment of a tax, penalty, or other sum. This limitation does not affect any suit or proceeding instituted prior to the passage of the 1921 law. Suits or proceedings by

the government for the collection of any internal revenue tax can not be instituted after the expiration of five years from the time such tax was due, except in case of fraud with intent to evade tax, or willful attempt in any manner to defeat or evade tax. This limitation does not apply in cases of a failure to file a required return, in cases of tax due on account of amortization deducted by the taxpayer and later disallowed, or in cases of tax due on the final settlement of losses and other deductions tentatively allowed by the Commission pending a determination of the exact amount deductible. The limitation of five years is now made applicable to the collection by suit of taxes due under all income, excess-profits, or war-profits tax laws, as well as the Act of 1909, except as to suits or proceedings begun at the time of passage of the Act of 1921. No suit for the purpose of restraining the assessment or collection of any taxes shall be maintained in any court. The term "restraining" is construed by the new regulations "in its broad, popular sense of hindering or impeding, as well as prohibiting or staying, and the provision is not limited in its application to suits for injunctive relief."

EXPERT ASSISTANCE NEEDED

It is just as necessary for a taxpayer to have expert assistance and technical advice under the new law as under previous laws. It was pointed out in an article published in the October, 1921, issue of the MINING CONGRESS JOURNAL that many important questions are still undetermined, and taxpayers are compelled, in many instances, to accept arbitrary settlements or to resort to the Federal courts for relief. If the procedure of the Bureau could be changed, or the Income Tax Unit reorganized, so that taxpayers could have their tax liability determined without the great inconvenience and expense and long delays incident to the adjustment of their cases, there would be less complaint and criticism and less litigation. It must be remembered, however, that the Bureau of Internal Revenue is one of the largest administrative organizations in the world, and the Commissioner experiences great difficulties in securing and retaining qualified men, and in maintaining the high standard of efficiency necessary to the settlement of technical issues usually involved in controverted cases. In this respect one of the most serious handicaps has been the matter of salaries adequate to attract and hold men who measure up to the highest standard of requirements; but it is worthy of note that moral failures in the tax administration have been few, and patience, together with untiring effort, may contribute to the final solution of many of the problems involved in the administration of the Federal tax laws.

MINING COMPANY PRESENTS TAX FACTS IN TERSE MANNER

TERSE PRESENTATION OF the tax history of a large mining enterprise directly to the public through the medium of daily newspapers to show the burden which has been saddled during recent years upon the back of the mining industry is the motive of a campaign recently inaugurated and being successfully carried on by the Anaconda Copper Mining Company. The idea in its application to the mining industry is an outgrowth of suggestions which were presented by a representative of that company to the tax conference, held in connection with the annual meeting of the American Mining Congress in Chicago last year.



ALBERT J. NASON
Vice-President American Mining Congress
State of Illinois

SEVENTY-FIVE thousand acres of coal property are controlled and operated by companies directed by Albert J. Nason, who, virtually since his advent into the coal trade in 1906, has been one of the outstanding figures in the bituminous field. His reputation is based on his introduction of enterprising methods and trading aggressiveness.

He is president of two of the largest coal corporations in Illinois. One, the Nokomis Coal Company, has a daily output of 5,500 tons at Nokomis, Ill. This mine has furnished a field for experimentation, not the least of which was the pioneer work in developing A. C. electric current underground at 2,300 volts and carrying to the working face before transforming it for machine use.

The other organization he heads, the Illinois Coal and Coke Corporation, owns 25,000 acres of Jefferson County coal in Southern Illinois, the first unit of which this year will be developed to produce 7,500 tons daily. This concern bought out of the Illinois holdings of the Pittsburgh Coal Company in 1920, and now is operating them at a greatly increased rate of production.

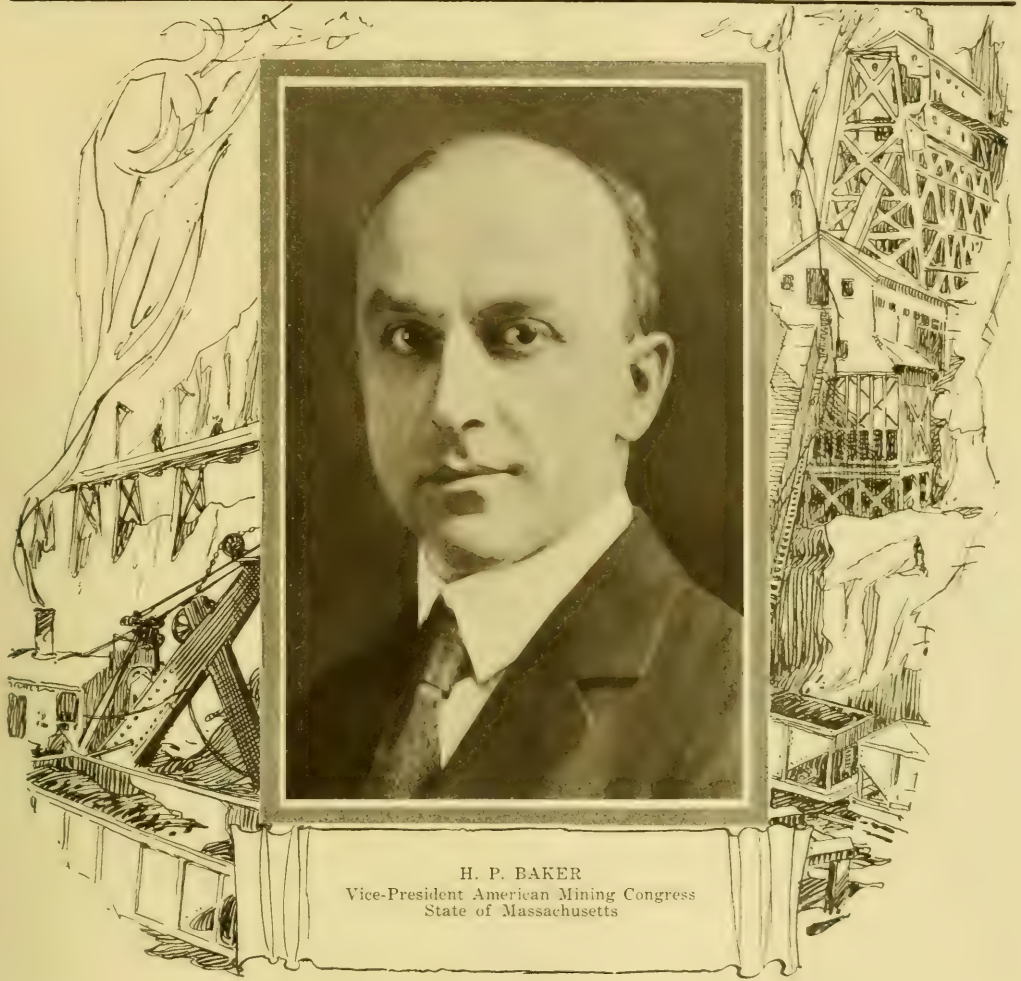


L. A. REED
Vice-President American Mining Congress
State of Wyoming

MR. REED has spent thirty-two years of his life in the oil refinery business, starting with the Standard Oil Company at Cleveland, Ohio, in 1890. He now is a director of the Midwest Refining Company.

He joined the forces of the Canfield Oil Company in 1900, and in 1907 went to Boulder, Colo., and built a refinery for the Inland Oil and Refining Company, remaining with that organization until production ended in the Boulder field.

In 1911 he went to Butler County, Pennsylvania, and erected a refinery for the High Grade Oil and Refining Company, which he operated until the spring of 1913, when he accepted the position of general superintendent of manufacturing for the Midwest Refining Company, then in its infancy, and superintended the construction and operation of its large refinery at Casper, Wyo., and also of its refineries at Greybull and Laramie.



H. P. BAKER
Vice-President American Mining Congress
State of Massachusetts

MR. BAKER has been identified with gold mining and quicksilver mining for the past twenty-five years. As a member of the board of directors of the New Idria Quicksilver Mining Company, he serves as vice-president and general manager of this company, which has large properties in California and which, during the war and for many years prior, was the outstanding domestic producer of quicksilver. Mr. Baker, therefore, divides his time between California and Boston, the home of the executive offices of the company and where he makes his own home.

He has long been deeply interested in the work of the American Mining Congress, and, in becoming state vice-president for the State of Massachusetts, has undertaken a work of further service to the industry.



JOHN M. SULLY
Vice-President American Mining Congress
State of New Mexico

POSSESSED of broad experience gained through many years of close association with and application to problems of all types connected with mining, Mr. Sully occupies a notable position as one of the foremost authorities of the industry. He now is general manager of the Chino Copper Company and vice-president and managing director of the Gallup American Coal Company.

Following his graduation from the Massachusetts Institute of Technology in 1888, he was associated with a number of engineering and mining firms, securing valuable experience in general engineering, coal mining, railroad work and in the metallurgy of iron and general mineral examination work. After eight years of service as superintendent for mining companies in the south and middle west, Mr. Sully in 1901 went to California, where he soon afterward began examination for private parties of mines in that state and in Sonora, Mexico. In 1903 he became an executive of the Woodstock Iron Company, Anniston, Ala., later holding office as general manager of a subsidiary company. He returned to the examination of Mexican mining properties for private parties in 1906 and continued that work until 1908, when he became associated with the Santa Rita Mining Company as consulting engineer and engineer in charge.

He has been with the Chino Copper Company since 1909 and with the Gallup American Coal Company since 1917. He now is a member of the Board of Regents of the New Mexico State School of Mines.

COLORADO RIVER PROJECT TO SHARE MINING POWER SERVICE WITH PRIVATE ENTERPRISE

THE MINING INDUSTRY of the Southwest in five years will be drawing its power in large quantity from the proposed Diamond Creek project in Arizona, if forecasts of Federal Power Commission officials are correct. The Colorado River project, centered around the enormous construction plan for Boulder Canyon, would be in a position to supply those mines in Arizona and New Mexico which it is expected will secure their power from Diamond Creek, but a number of factors cause experts to believe that the government project will not lap over into the territory which private capital for many years has been planning to cover.

An application for license for the Diamond Creek plant now is pending before the Federal Power Commission. This fact recently was communicated to Secretary of Commerce Hoover, who is chairman of the Colorado River Commission. He stated that consideration would be given to the relationship between the two projects during the hearings held by the Commission at several points in the Southwest during the month.

APPLICATION FILED IN 1907

The Diamond Creek application is filed in the name of J. A. Girand, who has been working since 1907 on plans for that project, which is to be backed financially, it is understood, by a number of large mining companies. Mr. Girand secured a preliminary permit from the Department of the Interior before the Federal Power Commission was created, this later being transferred to the Commission's supervision. The Commission found additional field work necessary to furnish what it deemed sufficient data to accompany an application for license which Mr. Girand submitted in 1920, and accordingly granted another permit for twelve months, this to remain in effect until July 19, 1922.

Although the report of the board of engineers which investigated the feasibility of the Boulder Canyon project placed the mining industry of the Southwest as first upon the list of consumers of power which would be derived therefrom, those who have made a study of the situation point out that the Colorado River project mainly will be devoted to reclamation, with the development of water power coming as a secondary activity. Taking this into consideration, as well as the fact that the Diamond Creek plans have been given intensive study since 1907, it is not thought probable that the Colorado River Commission will take action other than to express its approval of the private project. It is stated that power to be developed at Diamond Creek, amounting to 400,000 horsepower, will be closer to consuming points than that which originates at Boulder Canyon.

The speed with which the Diamond Creek project will be constructed also is a point which is being stressed. Its preliminary plans having been under consideration since 1907, work will start almost immediately upon the license being issued, since delay would mount up the interest on the capital involved.

A second application, carrying in field data asked for by the Commission, following the filing of the first application, was placed before the Commis-

sion a month ago, and officials of the body exercised the belief that action would be taken upon it as soon as the Colorado River Commission completed its consideration of the relationship between the two projects. Since the flow from the Boulder Canyon reservoir would not reach up the river to the site of the Diamond Creek, there are no physical objections at operation of the two plants, experts state.

In discussing the relationship of the Federal Power Commission to projects along the Colorado River and the policy which the Commission has been exercising in respect to those projects, O. C. Merrill, executive secretary to the Commission, says:

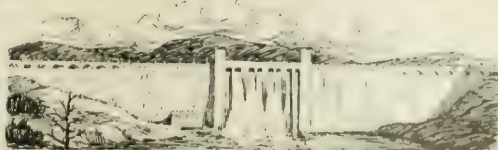
"There are now on file before it 20 applications affecting the Colorado and its tributaries involving an aggregate of 4,500,000 primary horsepower, an amount far greater than has been applied for in any other river basin in the United States. With one exception in which rights had been acquired under statutes antedating the Federal Water Power Act, the Commission has taken no action upon applications affecting the Colorado River. It has been aware of the movement inaugurated by the League of the Southwest, has been in hearty accord with the purposes for which this league was formed, and has not wished by taking premature action to complicate a situation, which under any circumstances is bound to be fraught with many difficulties.

In submitting to the Senate the report on the proposed Colorado River irrigation and power project, the Secretary of the Interior recommended that the U. S. government undertake through suitable legislation the construction of a reservoir at or near Boulder Canyon on the lower Colorado River, the Federal Fund to be reimbursed by leasing the power privileges incident thereto. Under the recommendation, any state interested in this development would have the right at its election to contribute an equitable part of the cost of construction of the reservoir and receive for its contribution a proportionate share of the power at cost to be determined by the Secretary of the Interior. The proposal is also made that the Secretary of the Interior be empowered at the full hearing of all concerned to allow the various applicants their due proportion of the power privileges and to allocate the cost and benefits of the high line canal which it is proposed to construct from Lagoona Dam to the Imperial Valley.

VITAL TO MINING INDUSTRY

The proposed power development in the southwest will have a tremendous bearing on the mining industry of that section of the country, it is generally admitted, and especially so in Arizona, where problems connected with the power supplies now form one of the largest obstacles with which operators of that state have to deal, according to authorities. It is stated that the cost of producing gold in Mohave County alone will be reduced by half when sufficient power for all purposes is supplied. It

is being forecasted that gold-bearing ores which now cost from \$6.50 to \$7 per ton for mining and milling will be put through the same processes in the future for from \$3.50 to \$4 per ton.



SUPREME COURT REFUSES TO PASS UPON LEGALITY OF INDUSTRIAL TRIBUNAL

EXPECTATIONS that the United States Supreme Court would pass upon the constitutionality of the Kansas law creating the Court of Industrial Relations were brought to earth when the country's highest tribunal refused to express its attitude on the subject in dismissing the appeal brought before it by Alexander Howatt and his associates in labor unions in the Kansas coal fields. The court refused to make a decision upon the constitutionality of the industrial act because no questions of Federal law were involved.

The appeal was made by the union officials from the Supreme Court of Kansas which had sustained rulings of the District Court of Crawford County, Kansas, compelling workmen to give testimony before the Court of Industrial Relations, and enjoining them against calling or causing a strike among the employes of mines in Crawford County.

The decision of the Supreme Court has the effect of sustaining the rights of the Industrial Court to function as an investigative body, in addition to sending Howatt and his associates to jail for a year unless they are able to find some relief through the statutes of the State of Kansas.

TEXT OF DECISION

Chief Justice Taft, who spoke for the court in handing down the decision, said:

"We are of opinion that in neither case is the Kansas law creating the so-called Court of Industrial Relations presented to us in such a way that we can pass upon the features of that act which the plaintiffs in error insist violate their rights under the Federal Constitution.

"The main purpose of the act is to create an administrative tribunal to arbitrate controversies between employers and employes in industrial, mining and transportation businesses, declared to be affected with a public interest. The so-called court is not a court. It is an administrative board. It makes investigations into these industries and findings as to the conditions surrounding them, the wages of the workers, the return and profit to the employers and determines what these ought to be in the future, and then directs that they shall be so carried on.

INVESTIGATIVE POWERS UPHOLD

"They have power to apply to the Supreme Court of Kansas to enforce their order. That court reviews the findings and evidence, may take additional evidence, and renders a judgment and enforces it. The act thus provides for compulsory arbitration. But it contains a provision that if any part of the act be found invalid, the remainder shall stand. Even if the compulsory features of the law are invalid, therefore, the power to investigate and make findings will stand.

"Undoubtedly aside from the compulsory features, the law is valid. The plaintiffs in error do not, and can not, contend that the Kansas legislature had not power to provide a board to investigate industrial relations in certain industries and to summon witnesses, and to enforce their attendance through a court of general jurisdiction.

"As for the second case, the Supreme Court of Kansas said that laying the Industrial Relations Act aside, the petition could be sustained on general grounds and that on the review of a sentence for contempt in violating an injunction issued by a court of general jurisdiction with equity powers, neither the sufficiency of the

petition nor the sufficiency of the evidence to warrant the order of injunction can be thus collaterally attacked, and the only remedy of the plaintiffs in error was to obey the injunction, and to have its validity reviewed by the court issuing the injunction or an appellate court.

"These conclusions seem to us sound but whether they are, or are not, they do not involve any Federal question. Their decision does not turn on the constitutionality of the Court of Industrial Relations Act. The decision of the State Court binds us. We must, therefore, dismiss both writs of error."

RIGHT TO PREVENT STRIKE

A unique presentation of the right of a state to insist upon continuity of employment in production of public essentials was made before the court by F. Dumont Smith, representing the State of Kansas. Citing a Kansas statute which forbids an engineer, under heavy penalty, to leave his engine between division points, Mr. Smith said:

"That engineer is chained to his throttle for the time being as the galley slave to his oar, but the state did not conscript Casey Jones and make of him first a wiper, then a fireman, and then an engineer. The state does not compel him to remain in that employment. When he turns his engine over to the hostler at the division point, he is free to quit, but when he accepts the employment of engineer he is to an extent enlisted in a public service; he accepts this as part of the burden of his employment, as the coal miner accepts the fact that he must go underground to earn his daily wage. So when the Kansas law forbids those engaged in these essential industries from striking, from conspiring to strike with the intent to cripple these industries, or whenever such conspiracies threaten the public peace or endanger the public health, this law interferes. This becomes, then, like the engineer's continuance at his throttle, part of the burden of his employment in these industries."

"If we are correct in assuming that production is more essential than distribution, then the state has the same right to insist upon continuity of employment in production as it has to insist upon continuity of employment in distribution. Once this idea is grasped, it becomes clear that this law is sound."

WORLD'S PETROLEUM PRODUCTION

THE American Petroleum Institute estimates the world's petroleum production in 1921 at 759,030,000 barrels, compared with a production of 694,854,000 barrels reported by the U. S. Geological Survey for 1920. The indicated increase for 1921 is 9.2 percent.

The marketed production of the United States, as reported by the U. S. Geological Survey, was 469,639,000 barrels, compared with 443,402,000 barrels in 1920, an increase of 5.9 percent. United States production in 1921 was 61.9 percent of the total estimated world production.

Mexico's production in 1921 totaled 195,064,000 barrels, against 163,540,000 barrels in 1920, an increase of 19.3 per cent. Mexico's 1921 production was 25.7 per cent of the world's estimated production. The United States and Mexico combined produced 87.6 percent of the world's estimated production in 1921.

ECONOMIC SITUATION OPENS DOOR TO U. S. CAPITAL IN FOREIGN OIL FIELDS

AMERICAN oil companies soon will find handicaps removed which have blocked their participation in the development of certain foreign oil fields, according to the word spoken unofficially by those closely in touch with a newly developing situation.

The heavy financial burdens under which virtually every major nation is laboring prohibit evasion of the basic economic laws to be continued for long. It is this condition in the main that is forcing open the door to permit the advent of American capital for exploitation in foreign oil fields where previously it has found business thrown before it. A secondary and more subtle cause for the change of certain foreign policies resides in the atmosphere following in the wake of the recent international conference in Washington, which has had the effect of casting nations into the role of industrial relatives rather than individuals.

WEIGHT OF TAXATION FELT

Foreign companies operating under government protection, which sometimes has been labeled as subsidization or ownership in fact, have come to feel the weight of taxation which they are called upon to shoulder by themselves in the absence of other capital. It is being pointed out that pressure rising out of this situation is causing the foreign governments involved to analyze their position in respect to admission of American money and ambition into the fields. Those who see a tendency toward increased internationalism of industry trailing behind the Washington conference declare they are indulging neither in false optimism nor "Pollyanna" enthusiasm when they forecast a revision of foreign oil policies. They feel that the foreign governments are in the position of "seeing the light" in realizing their inability to successfully solve their economic troubles of the post war period without making use of capital which will furnish them additional revenues and incidentals relief.

The foremost indications of this shift in policy are being seen in situations surrounding the Northern Persia and Dutch East Indies fields, while the outlook in Mesopotamia steadily is growing better from the standpoint of American capital.

THE BRITISH VIEW

A forecast of this turn of events was made by Sir John Cadman, president of the Institution of Mining Engineers of Great Britain, when he stated, while on his recent visit to the United States, that "the British people welcome American capital; the door is open with few exceptions, and, where there are now restrictions, they soon will be removed." This situation, the eminent British authority declares, is the result of events which have grown out of the war, having their inspiration in the efforts in American capital to develop enough oil in foreign fields to supplement domestic production in supplying the rapidly-increasing demand in the United States.

Outlining the British oil policy in an article appearing in the February issue of Mining and Metallurgy, Sir John Cadman discusses the subject in these words:

"A weird picture has been drawn about Mesopotamia.

The fact is, that the ownership of the oil deposits in Mesopotamia will be secured to the Arab state as a part of the administrative arrangements under the treaty mandate. Great Britain is denying the opportunity to all nationals, her own included, to make any superficial examination of these areas for commercial purposes until such times as she has been definitely charged as a mandate.

"One is led to believe that the British Government is a great oil company, and that it has as its subsidiaries such companies as the Royal Dutch Shell and Anglo-Persian companies. Rumor asks you whether you can afford to become dependent for even a portion of your crude petroleum upon such a British oil corporation, and especially upon a great Anglo-Persian-Royal Dutch Shell combine. You are asked to believe that within a few years your own internal source of supply will be exhausted.

"Emphatically, the British Government is not in the oil business. She does not control the Royal Dutch Shell—she does not have a single share in that corporation, which is controlled by foreigners—and, with the exception of holding shares in the Anglo-Persian Oil Company, the British Government is not interested in oil companies, and certainly has no control over the commercial management of the Anglo-Persian Oil Company."

STATE DEPARTMENT ACTS

Coincident with the appearance of this new light for domestic oil companies, it has been reported that Secretary of State Hughes has taken up through diplomatic channels the campaign to provide American rights and interests with a place in the Mesopotamian fields.

While no statement has been made as to the position that the British Government has taken in connection with Mr. Hughes' endorsement of the stand taken on the subject by the Wilson administration, and his attack upon the validity of the Turkish Petroleum Company's concession, officials of this Government are quoted as believing that "the United States is in a very strong position," and that no doubt is entertained as to the ultimate outcome of the negotiations. This strength of position is being attributed largely to the same shift in economic conditions which forecasts participation of American capital in foreign oil developments on a scale not hitherto possible.

Pointing to the illogicality of this country providing loans which enable foreign companies to strengthen resistance of outside capital into their fields, these same high authorities declare that the door might be swung open even more speedily were this condition eliminated.

MINE TIMBER REPORT

THE Bureau of Mines has issued a report on its results of its studies to date on the subject of preservation of mine timbers. The report is the compilation of R. R. Horner, a member of the Bureau's engineering staff, and George M. Hunt, of the U. S. Forest Products Laboratory, and was presented before the New York meeting of the American Institute of Mining and Metallurgical Engineers.

GREAT INTEREST SHOWN IN PLANS FOR CLEVELAND CONVENTION AND EXPOSITION

THE ANNUAL conventions of The American Mining Congress have come to be meeting places of the representatives of the entire mining industry, where problems of vital importance are discussed, solutions presented, policies formulated and understandings of mutual benefit are reached. Twenty-five years of consistent service have made these meetings an important factor in the continued development of the industry.

During the last few years an important and essential factor has been added to these annual conventions by furnishing the manufacturers of mine equipment and mine machinery the opportunity of exhibiting their products at the National Expositions of Mines and Mining Equipment. These expositions have added much to the significance and benefit of these meetings. To the mine operator the exposition has made it possible to study and compare the latest forms of mine equipment and machinery and by such study to secure the type of equipment especially fitted to meet the particular requirements of his operation. As one prominent mine operator has stated: "The continued maintenance of the development of the mining industry in the United States is largely dependent upon the further utilization of labor-saving equipment and machinery. The successful mine operator and mine manager is, therefore, studying with greatest care every type of equipment which indicates the possibility of reducing operating costs, and I look forward to these annual expositions as the place where I can study the different types of such equipment and machinery. These expositions furnish me with the essential facts upon which I base my future purchasing."

To the manufacturer these conventions and expositions furnish an opportunity not only of direct participation in a personally gathering of mining men from all parts of the country who are potential purchasers of his product and of displaying his equipment in an effective way, but also of discussing personally with practical operating officials from all the important mining districts the individual problems which the mine operator confronts, and of pointing out the methods by which the solution of such problems may tend to solve such problems.

The interest of the manufacturers who have participated in these expositions of The American Mining Congress in the past is well indicated by the following statement which appears from a letter received from N. S. Greenfelder, mining engineer of the Hercules Powder Company, in charge of the exhibits of the

Hercules Powder Company at several of the Expositions of Mines and Mine Equipment of The American Mining Congress. Mr. Greenfelder states:

"I have been closely in touch with the activities of the American Mining Congress for the last fifteen years, during which time it has grown from a small society with headquarters at Denver, to one of the strongest organizations in the country. The reason for this growth can be given in one word: Service. The mining industry has had many problems upon which the public and its representatives at Washington were long uninformed. The American Mining Congress has, in my opinion, done more than any other single agency to enlighten those in authority regarding the activities and problems of the mining industry.

"The exhibitions at the annual conventions of The Mining Congress during the past few years have provided an opportunity for manufacturers of materials used in mining to display their wares in a particularly effective manner. No one attends these conventions who is not interested in some phase of the production of minerals, coal, rock products or oil. Men come to these conventions to discuss their problems and to determine upon the best course to pursue in solving them. No problem is more important than that

of actual production. No one is more capable of giving the operator detailed information on the most economical equipment and methods than the manufacturer of the materials or machines used on some phase of the work. Is it not logical to suppose that those attending these conventions are in a particularly susceptible frame of mind to observe what the manufacturer has for sale and to learn how it can best be adapted to the job back home?

"The writer has found from attending a number of these conventions in the past, in charge of a manufacturers' exhibit, that this is true. Officers and officials of mining and oil companies do attend these conventions in large numbers. They visit the booths at the exposition and they are willing and glad to listen to what the manufacturer has to say regarding his product. Their problems can be and are solved just as much by what they hear in the manufacturer's booth as from the discussion in the convention hall.

"The Manufacturers' Division of the American

AN EXHIBITOR'S OPINION

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MEMBERS OF BOARD OF DIRECTORS, MANUFACTURERS DIVISION, AMERICAN MINING CONGRESS

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 pany, St. Louis, Mo.

WILLIAM WHALEY
 Vice-President Meyers-Whaley Company,
 Knoxville, Tenn.

C. W. CHAPPELLE
 District Sales Manager Ironton Engine
 Company, Ironton, Ohio

Mining Congress, therefore, provides an unusual opportunity for firms whose products are used by the mining and oil industries to meet their customers on a common ground. In the final analysis, whatever benefits an industry benefits the manufacturer serving that industry, and vice versa. Because no organization has rendered greater service to the mining interests of America than has the American Mining Congress, it has attained its present position of importance. An invitation is now extended to those who supply the equipment which makes modern mining possible, to participate in this work, and to make these conventions a permanent and even more important annual event. The proposition is sound from an advertising and sales standpoint—it is sound from a broader standpoint, one which determines the ultimate position of any enterprise; a word which I used at the beginning to explain the success of the American Mining Congress itself—the proposition is sound from the standpoint of service. That is why the Hercules Powder Company is a charter member of this division."

Mr. Greensfelder's statements indicate clearly the practical benefit to be derived from the conventions and expositions of The American Mining Congress, and it is the opportunity presented at these meetings for informal and practical discussions of this character which is making these conventions and expositions of such great mutual benefit both to the mine operator and to the manufacturer.

MANUFACTURERS DIVISION A BENEFIT

These conventions and expositions are, therefore, essentially cooperative enterprises. In order to secure the fullest possible cooperation and to enable the manufacturer to have a greater participation, the Manufacturers' Division of The American Mining Congress was organized, and its steady growth is the best evidence of its value. By becoming members of the Manufacturers' Division manufacturing concerns in reality become participating partners in the development of these great annual meetings. The value of the Manufacturers' Division, as an important factor in the further development of the conventions and expositions of The American Min-

ing Congress, is best expressed by Walter C. Doering, the vice-president of the Southern Wheel Company, who was elected chairman of the Board of Directors of the Manufacturers' Division at the organization meeting held in Chicago on January 19.

In a letter recently received from Mr. Doering, he states: "I am enthusiastic over this new arrangement, as it will no doubt bring about the fullest cooperation between exhibitors, and with exhibitors being represented through this Manufacturers' Division, and consequently having a direct interest in the success of the annual meetings, there is no doubt in my mind but what the success will be far greater than any of us realize at this time. With the new Manufacturers' Division everyone interested in the promotion of sales of mining equipment and supplies will be directly benefited by getting together and working to one end, and some of the conditions prevailing in previous expositions will now be entirely eliminated on account of this cooperative movement brought about by the formation of the Manufacturers' Division."

VERY ACTIVE INTEREST

The best indication of the truth of these statements is the fact that representative manufacturers of mine equipment and machinery are taking a very active interest in the plans for the Twenty-Fifth Annual Convention of The American Mining Congress and the National Exposition of Mines and Mine Equipment to be held in Cleveland, Ohio, October 9 to 14.

Within two weeks after the initial distribution of floor space charts and contract forms, approximately 20 percent of the floor space has been allotted and space reservations are coming in very steadily. Many of the firms which exhibited at Chicago last year have doubled the amount of space which they used and a number of new exhibitors have been added. From present indications both floors of the exposition will be crowded, and it is expected that there will be at least two hundred manufacturers represented at Cleveland with displays of their products.

PUBLIC EXHIBITS

The notable series of public exhibits in Chicago last October formed an attractive and interesting feature of both the convention and the exposition. Arrangements are being made for a similar display of mineral wealth and mine resources at Cleveland. Alaska and the problem of its development is attracting attention and the Territory of Alaska will have in all probability an even larger and more comprehensive display than the extremely interesting exhibit last year. Governor Scott Board is strongly in favor of this plan and will arrange for the Alaskan representation upon his return to Juneau. It is expected that the important western mining states will be well represented, and, in addition, invitations have been sent to several of the South American countries for the exhibit of the Republic of Mexico was of special interest in Chicago, and it is hoped that there will be participation in Cleveland not only from Mexico but also from Cuba and perhaps one or two other foreign countries.

In connection with the work of the Manufacturers' Division, a special page will be devoted in the *MINING CONGRESS JOURNAL* to the activities of this division and to the interests and activities of its members, starting with the May issue of the *MINING CONGRESS JOURNAL*.

MINING MEN OUTLINE POSITION ON NATIONAL ISSUES

CLEARLY PORTRAYING their stand upon such issues of national scope as affect the mining industry, members of the Northwest Mining Association, assembled in annual convention at Seattle, recently passed a set of resolutions holding more than ordinary interest.

A strong resolution, embodying a memorial to the Secretary of State, was adopted in regard to reciprocity for lead refined in United States bonded smelters and derived from Canadian ores, it being requested that diplomatic negotiations be instituted immediately for the purpose of securing removal by the Canadian Government of its tariff on such lead. Another resolution urged prompt action in the matter of the new tariff act.

It was urged that any soldier bonus legislation involving a large expenditure be carefully considered before enactment, the principle of such legislation in its probable economic results be opposed.

Insistence was expressed that the silver sold to Great Britain under the Pittman Act be repurchased and restored to the Treasury to the full amount specified in the bill.

Condemnation was directed against the proposed national blue-sky legislation now pending before Congress, the sentiment being expressed that "it is time all lines of industry, including mining, be given a rest and relief from "further imposition of sumptuary or obstructive laws of any kind."

Of especially appropriate character is the resolution dealing with the Alaskan situation, around which official Washington is swirling as the conservation question is centered in the fight over the proposal to transfer the Forestry Service to the Interior Department.

Other resolutions carried the following expressions: Opposition to proposed revision of the mining laws; advocacy of a specific tariff at \$15.00 a ton on foreign magnesite imported into America; enlargement of the Moscow, Idaho, station of the Bureau of Mines so that its scope will be that of a full station as soon as funds will permit, and favor of completion of certain roads in Idaho which will open up mineral and other valuable producing areas.

UTAH CHAPTER ELECTS OFFICERS

FRED COWANS, general manager of the Utah Consolidated Mining Company at Bingham, was elected governor of the Utah Chapter, American Mining Congress, at the annual meeting, March 13. J. William Knight, of the Knight Investment Company, Provo, Utah, was elected 1st vice-governor; V. S. Rood, general manager of the Utah Apex Mining Company at Bingham, was elected 2d vice-governor; D. D. Muir, Jr., general manager of the United States Smelting, Refining and Mining Company, was elected 3d vice-governor, and A. G. Mackenzie was re-elected secretary and treasurer.

Directors were elected as follows, most of them being re-elected:

L. S. Cates, O. N. Friendly, J. Wm. Knight, Imer Pett, D. D. Muir, Jr., Thomas F. Kerns, Moroni Heimer, J. C. McChrystal, Solon Spiro, O. J. Salisbury.

The hold-over directors are:

J. M. Bidwell, H. M. Hartmann, F. J. Westcott, Ernest Bamberger, R. C. Gemmill, D. MacVichie, V. S. Rood, M. R. Evans, C. E. Loose, J. B. Whitehill, Fred Cowans, G. W. Lambourne, E. J. Raddatz.

Woofing and Warping

V. Senator James A. Reed

A Series of Scrutinies Directed Toward Notable Legislative Personalities

By IRA L. SMITH



Senator James A. Reed

I WENT up on Capitol Hill one afternoon last month and saw a lot of Senators hiding behind trees and bushes all over the landscape, their bulging eyes peering out of their blanched faces as evidence of the fear that had driven them out into the great outdoors from their places in the Senate chamber. It seems that someone had spread the word that Jim Reed was going to turn his satire loose that afternoon and the solons had taken to the lofty and uncut rather than chance being made the victims of his torrid tirades.

Jim looks like a veteran district-attorney with a toothache. He carries his head slightly tilted like a bull that sees red for the first time in two months and is devoting a few moments to quiet consideration of the best time to start a charge. His lips are tightly compressed, apparently feeling that they should let no words escape unless they be of sufficient number to form a verbal flood.

His vocal cords remind me of a 1910 Ford that's still going strong. Being sixty years old, one would figure that either he'd just get tired of gabbing or that his voice would pull the stuff made famous by the one hoss shay and drop in its tracks all of a sudden.

At the age when most men are becoming addicted to the joys of retirement, Jim Reed stands on the floor of the Senate, indulging in all the pyrotechnics of a sea-

soned legal prosecutor as he swings a verbal flail, caring not whether it strikes a bitter enemy or a man with whom he has eaten lunch that self-same day.

A large supply of hot-water bags should be kept on tap out in the Senate cloak-rooms so that they would be available at all times to unfortunate solons down whose spines shivers have flown when the gentleman from Missouri has interrupted them, casting them into a quaking that makes their knees rattle like the ice in a Scotch high-ball while their frames take on the tremors of a thousand attacks of the ague.

Irony and satire were invented centuries ago by some old maid who was crossed in love and took to keeping roomers in a cliff-dweller's apartment. But few folks who have lived during the intervening years have had their ears wave back and forth to the tune of such a clever streak of invectives colored with caustic wit as Jim cuts loose in these hectic days of argument on matters *a la international*.

He rarely takes his place in his seat at the front of the Democratic side of the Senate chamber except when he intends to hop into the verbal swim. Occasionally, however, he does ease into the rear of the hall, dropping onto a couch, and calmly locking his hands behind his head. Then he eases a doze before the public gaze while his colleagues indulge in what must seem to him to be the rather inane sport of tossing bouquets at one another while something with no more punch in it than an appropriation on the building of a post-office at Wahmeggan is being discussed.

To write like this of the man, one would think that he is possessed of the personality of a three-minute egg, and of the sort that is hard enough to consider a battle with Jack Dempsey on a par with the job of carrying the ice cream at a Sunday School picnic. But Jim Reed is something of a paradox. If I told you that the chap who played a prominent part in the senatorial attack on the League of Nations, which harbored all the heavy stuff in the game, had let tears trickle down his creased cheeks like a school-girl when a bunch of friends unexpectedly met him at the station in Kansas City, you'd think I'd been violating the amendment that made Volstead famous. I am telling you that's the kind of a man he is, but don't count on it if you get in an argument with him—even if you were one of those who met him at the train in K. C.

FEDERAL TRADE COMMISSION OPPOSED TO PRESENT FORM OF BLUE-SKY BILL

WHILE OFFICIALS of the Federal Trade Commission have not yet rendered an official opinion upon the legislation now pending before Congress which proposes a Federal blue-sky law, it is known that they expect to be called upon to express their ideas concerning its practicability. This action would complete the circle in which would be included the views of the two branches of the executive division of the government which are most concerned with stamping out sales of illegitimate securities. The Department of Justice played a large part in the drafting of the Denison bill, which bids fair to make more legislative progress than any other similar measure ever introduced in Congress. The current impression is that the Federal Trade Commission does not hold the Denison bill in especially high favor, feeling that it does not contain provisions of the stringent character necessary to secure the results desired. Those who advocate the measure, however, point out that the bill will give additional strength to state measures, as well as furnishing a means of eliminating to a degree the interstate violations of state blue-sky laws; they declare that this is sufficient scope for a Federal statute based upon the ideas that the individual states should be able to take care of the situations arising within their own boundaries.

FEW MINING SECURITIES FRAUDS

The mining industry is comparatively free of stock securities' transactions which may be characterized as illegal by government agencies which recently have intensified their interest in applying themselves to the task of enforcing blue-sky provisions as held by standing laws. This is the indication drawn from statements made by those who are closely connected with the government's interests in the matter. An official of the Federal Trade Commission stated that of all the complaints which have been brought before that body against alleged promoters of fraudulent securities, he remembered but few instances where the securities of a mining company were involved. The large majority of the cases, he stated, were based upon transactions in the securities of automobile manufacturing concerns and exploitations in connection with oil.

DENISON BILL MAKES PROGRESS

The Denison bill advanced one step closer to enactment when the House Committee on Interstate and Foreign Commerce favorably reported the Denison bill, embodying in the final draft committee amendments which change the form rather than the substance of the measure by the same author which last month formed the subject of hearings held by the committee. With the bill scheduled to come upon the floor of the House at an early date, the measure is presenting itself in tangible form among the subject of the rather precipitated manner in which several branches of the government suddenly have focused their attentions to the subject of proposals for Federal supervision of securities' transactions.

In reporting the bill, Representative Denison, Illinois, author of the measure and member of the committee which has had it under consideration, said:

"The broad principle underlying this bill is that the general public should be permitted to protect their own

citizens from the sale of fraudulent and worthless securities in such manner as they think best. And since the Federal agencies—the mails and other agencies of interstate commerce—are being used to violate, evade and practically nullify the state securities laws, the Federal government ought to cooperate with the several states to the extent of preventing the use of its agencies for promoting the sale of fraudulent securities in the different states contrary to the laws of such states.

"The bill does not provide for any additional offices or the creation of any new bureaus. Its enforcement is placed with the Department of Justice."

Provision is made in the measure that the Attorney General shall, within a certain time, compile and publish the securities' laws of the different states together with all amendments thereof for the use of the Department of Justice, and shall furnish them to the various United States district attorneys, and, under such terms, rules and regulations as the Attorney General may provide, to any other person upon written application.

"It was shown," says Mr. Denison, "during the course of the hearings, that the economic committee of the American Bankers' Association and the executive committee of the Investment Bankers' Association approved the bill, and no serious opposition to the bill has been presented to the committee."

The mining industry's attitude toward the measure, as manifested in a poll made by the American Mining Congress, shows an almost equal division of opinion, with agreement on all sides, however, that no provisions should be enacted which would in any way have the effect of stifling the development of new mining enterprises.

CERAMIC STUDIES TO CONTINUE

ALTHOUGH Congress has refused a requested appropriation of \$35,000 for the purpose of making extensive ceramic investigations, the Bureau of Mines plans to continue such studies as have been initiated and such other investigations as the curtailed funds will allow.

The Bureau already has entered quite deeply into the investigation of means by which fuel economies may be effected in the firing of ceramics, this work being undertaken in connection with the cooperative agreement recently entered into by the Bureau with leading members of the ceramic industry.

An extensive study will be made at the Columbus station of the Bureau into chemical and physical changes which take place during the "oxidation period" of the firing of ceramic wares.

In order to keep in touch with the needs and development of the local ceramic industry, the ceramist of the Bureau's Seattle, Washington, station will maintain close contact and cooperate at all times with the ceramic manufacturers of that section of the country.

A number of other technical studies are to be continued, among them a continuation of the comparison of English china clay with Georgia kaolin, with an investigation of the effects of aging calcined clay in air and water.

SECRETARY FALL OUTLINES RESULTS OF FIRST YEAR AT HEAD OF INTERIOR DEPARTMENT

AMONG THE agencies of the government which have been largely instrumental in promoting a return to normal conditions, the Department of the Interior during the past year has rendered valuable service," says Secretary Fall in summing up the results of the first year of his administration at the head of the department.

Records for the past twelve months show an increase over the previous year in the amount of work accomplished, which in the cases of some bureaus sets new records.

During the year the Bureau of Mines has trained 15,341 miners in first aid or mine rescue work. Of this number, 10,599 received training in first aid; 1,065 were trained in mine rescue methods. 1,584 in a combination of first aid and mine rescue work and 2,103 were given additional training. During this same period, the Bureau of Mines rendered immediate assistance at twenty-one mine disasters.

ADMINISTRATION OF LEASING LAWS

Drilling and production of oil and gas on the public domain and the naval petroleum reserves are supervised through agencies directed by the Bureau of Mines. Although the Leasing Act was approved on February 25, 1920, no appropriations were made available until March 1, 1921, and, as a consequence, one of the first responsibilities facing Secretary Fall was to direct the organization of a field force which would protect the government's interests in the drilling, production and computation of royalties on lands which has been leased from the government. Seven field offices have now been established with a personnel of thirty-five men.

Reports made by the Bureau of Mines, now about 80 percent complete, show that almost 9,000,000 barrels of oil were taken from public lands in 1921, together with almost 2,000,000 gallons of casinghead gasoline and millions of cubic feet of natural gas. The royalty accruing to the government from this 1921 production amounts to \$2,036,228, which will be increased when compilations for the entire year are made.

The naval petroleum reserves in California during the past few years have suffered a huge loss through drainage and reduction of pressure in the oil and gas sands by neighboring offset wells drilled on patented properties. Privately-owned wells were draining the government reserves. Delay in drilling on the government properties undoubtedly resulted in a loss to the government of millions of barrels of oil. Upon the transfer of supervision to the Department of the Interior, Secretary Fall, in cooperation with the Secretary of the Navy, immediately adopted a policy of drilling on these reserves in order that the government might get as much as possible of the remaining oil.

Although the Geological Survey mapped 14,000 square miles during the past year, the task of surveying the United States will not be completed within the present generation unless sufficient funds are provided to permit the work to be carried on at greater speed than now is possible.

Under the present administration the General Land

Office has issued 125 oil and gas leases, representing \$3,467,081.00 as back royalty due the government, under what is known as the relief provisions of the leasing act.

Under the general provisions of the act, 5,296 permits have been issued, and 27 leases have been secured through sale at auction, on which a bonus of \$2,727,610,000 has been received.

"During this past year, concludes Secretary Fall's statement, I have endeavored first of all to familiarize myself with the varied operations of the Department in Washington and in the field. War threw many of the bureaus out of gear, and in several of these the work was greatly congested. With the loyal and efficient assistance of my co-workers there has quickly been developed a spirit of mutuality on the part of all employes, which has resulted in a marked increase in output without additional force or expenditures. This was largely due to the introduction of common sense business methods."

"Alaska bulks large in the public eye and the problem of wisely and efficiently administering the resources of this vast territory is increasing as its potentialities become better known," says the Secretary. "With the rapid exhaustion of the public lands and minerals within the states Alaska's great storehouses of natural wealth must soon engage our attention. In anticipation of this not remote exigency I have made recommendations for the centralization and coordination of administration now directed through some 38 bureaus and various departments. It is obvious while these anomalous conditions obtain general development will continue slow."

RAILROAD'S COMPLETION DRAWING NEAR

"The completion of the government railroad is near at hand, but in making accessible the vast deposits of valuable metalliferous minerals and great coal mines which are known to exist it is necessary to begin the early construction of wagon roads, trails, etc., and the development of water transportation from coast points to sea-going transportation lines. Such development will rebound to the benefit of the government railway as well as to the territory itself. Alaska contains millions of acres of land fitted for agriculture, and the agricultural resources are such that a large population can be supported without the costly importation of food stuffs from other sections. These lands should be carefully classified and a practical plan worked out to encourage settlement."

SMOKE PREVENTION STUDIES REVIEWED

PERSISTENT appeals to the Bureau of Mines are coming from municipal authorities throughout the country who are seeking to rid their communities of the smoke nuisance arising from improper combustion. It is in answer to a mass of such requests for information and technical assistance that the Bureau has carried on studies which are incorporated in a report which has just been issued. Additional investigations are being made in efforts to produce a smokeless fuel, with special attention being paid to the carbonization of high volatile coals.

NEW MINT DIRECTOR IS TRUSTEE FOR THIRD OF WORLD'S GOLD

FE. SCOBAY, of San Antonio, Texas, took office on March 21 as Director of the Mint, succeeding Raymond T. Baker. In this action was involved a change in trusteeship for one-third of the world's gold supply, the gold assets of the Mint service institutions aggregating \$3,000,000,000 according to a report made by Mr. Baker as he retired from office.

The total assets of the Mint service total approximately \$3,676,000,000, stored at various points throughout the country. This amount includes \$2,829,000,000 in gold bullion, and \$260,000,000 in gold coin; \$42,000,000 in silver bullion, and \$262,000,000 in silver coin; \$280,000,000 in paper currency and \$3,000,000 of minor coins, nickels and pennies.

The coin demand was larger during the calendar years 1917 to 1920, inclusive, than during any period in the history of the service, according to Mr. Baker's report. During the war period approximately 2,693,000,000 separate coins were struck off by the Mints, while the output for 1919 alone was 839,000,000 pieces, or 446 percent larger than in a normal pre-war year, such as 1915.

Mr. Scobey, who is the head of a large business house in San Antonio, has for many years been a friend of President Harding, having been secretary to the Ohio State Senate when the nation's Chief Executive was a member of the state legislature.



F. E. SCOBAY

CADIUM IN 1921

THE total production of metallic cadmium in 1921 was 65,101 pounds, a decrease of 64,182 pounds, or about 50 percent, as compared with the production in 1920, according to figures obtained from producers by the United States Geological Survey. On the other hand, the production of cadmium sulphide in 1921 amounted to 65,446 pounds, an increase of 33,313 pounds, or more than 100 percent over the production in 1920.

The value of the metallic cadmium produced was \$63,799 and that of the cadmium sulphide was \$71,336, making a total value of \$135,135, as compared with \$188,535 in 1920, a loss of 28 percent. The average selling price of metallic cadmium in 1921 was 98 cents a pound, as against \$1.17 in 1920, and that of cadmium sulphide was \$1.09 a pound, as against \$1.16 in 1920.

A noteworthy development of the year was the extension of the use of cadmium electroplating for preventing

CARBON MONOXIDE POISONING HOLDS ATTENTION OF EXPERTS

CARBON monoxide poisoning, characterized as one of the most widely distributed and most frequent of industrial accidents, has been made the subject of an extensive series of studies by government agencies concerned with industrial health conditions generally, and especially those of the mining industry. Out of these studies the Public Health Service has brought a plan for first-aid treatment of this poisoning which appears in underground work following shot firing, mine explosions, or mine fires. This emergency treatment is outlined as follows:

1. Administer oxygen as quickly as possible, and in as pure form as is obtainable, preferably from a cylinder of oxygen through an inhaler mask.
2. Remove patient from atmosphere containing carbon monoxide.
3. If breathing is feeble, at once start artificial respiration by the prone posture method.
4. Keep the victim flat, quiet and warm.
5. Afterward give plenty of rest.

Schedule 18, just issued by the United States Bureau of Mines, gives the procedure for establishing a list of permissible carbon monoxide indicators that are light in weight and portable for quickly and easily showing presence of carbon monoxide gas in mine rescue and recovery operations; or around blast furnaces, producer-gas and water-gas plants, and metallurgical and chemical plants. Examinations and tests of carbon monoxide indicators submitted by manufacturers will be made at the Experiment Station of the Bureau of Mines at Pittsburgh, Pa. The permissible indicators are to be reliable for indicating dangerous amounts of carbon monoxide in air breathed and are to show quantitatively the approximate concentration of the carbon monoxide. However, the quantitative indications may in general be less dependable than laboratory analyses.

Schedule 18 may be obtained from the Bureau of Mines, Washington, D. C.

DISCOVERY OF NEW PLATINUM DEPOSITS NOT LIKELY, SAY EXPERTS

IT IS possible, but does not seem probable, that more bodies of platinumiferous rock may be found in the United States, rich enough in platinum to be worked under present conditions, according to experts of the Bureau of Mines. It should be recalled, however, by all persons searching for platinum ores that the assay for platinum is difficult and apparently cannot be successfully made by all commercial assayers. It is, therefore, strongly recommended that samples of supposed platinumiferous ores be sent only to most reliable analysts. The Bureau of Mines has recently issued a comprehensive review of the various methods used, which gives in detail a method that may be considered standard.

Satisfactory substitutes have been found for platinum for various purposes, but in some chemical requirements and for use in high-duty electrical contacts no substitute has been found, declare the Bureau's experts, as the result of a study of this mineral just made. Some of the successful substitutes have been a combination of gold with one of the platinum metals. One known as palau (a combination of gold and palladium) resists the activity of most of the reagents, another "rhotanium" is claimed to make a good substitute for electrical heating units. One of the most promising substitutes is the so-called "white gold," which is an alloy of gold and one of the platinum metals.



Annual Banquet of the American Institute of Mining and Metallurgical Engineers, at the Hotel Pennsylvania
New York City, February 23, 1922

AIDS TO METALLURGICAL PRACTICE SEEN IN RESEARCH WORK

MANY FUNDAMENTAL problems looking to a betterment in metallurgical practice are facing solution through commitment of the Bureau of Standards to direct its patient scientific research in their directions. With a wealth of developed knowledge concerning the metals and their alloys standing to its credit following its work in past years, the bureau has mapped out an ambitious program.

The bureau's metallurgical division, in connection with technical societies or groups specifically appointed for the purpose of following up progress along various lines of metallic research, is preparing to follow plans already tentatively outlined for perfecting the industrial use of iron and steel, with a large number of similar studies on other materials being scheduled.

Chief among the proposed investigations is that which seeks to determine the effect of sulphur and phosphorus on steel. The investigation of the underlying causes and characteristics of corrosion of metals, which will involve elaborate laboratory research and extended field work, is being outlined systematically under the auspices of a newly-formed joint committee.

Among the subjects into which investigation is being carried on are:

Determination of the properties of different grades of bearing metals under

various conditions of temperature and treatment; a study of the strength of soldered joints and the proper combinations of solder and fluxes to be used for the various metals; the corrosion of acid-resisting alloys; and a large number of problems concerning steel and its alloys.

The lack of definite knowledge of the effects of gases in metals and of the most efficient methods of control of gas content is at present the cause of very serious wastes of materials, time and labor in almost all metallurgical work. The bureau plans to devote its special attention to research on this subject.

Tests completed by the Metallurgical Division during the past fiscal year numbered 5,588, the larger portion of which dealt with heat treatment and thermal analysis of irons and steels, and with characteristics of nonferrous castings.

The greatest handicap under which the bureau is operating and one which is making itself felt in connection with mineral research, as well as other branches of industry, is the great disparity between salaries paid scientific and technical experts in the government service as compared to those doing similar work for industrial concerns and educational institutions.

Distinct progress is reported by the bureau in its work on spectroscopic analysis of metals. There have been prepared standard alloys of metals in

definite proportions, and spectral examinations of these show that it is possible to make precise quantitative analyses within certain limits. The spectral method is in many cases more sensitive and convenient than the chemical analysis for determining the presence of impurities.

The bureau's experts have succeeded in detecting impurities in the range from 1 percent to 0.0001 percent with dispatch and precision from examinations of the spark spectrum. Standard alloys prepared include iridium with platinum, and iron, copper, lead and silver with gold. It is possible for the United States Mint to adopt this system of analysis for proof gold for which the chemical and assay methods are both more tedious and uncertain.

Development is reported of an interesting method for determining the rate at which the various metal sheet increases in thickness as a result of natural corrosion.

The electrical resistance of a definite portion of a sheet of metal depends, among other things, upon the thickness. If, therefore, reliable measurements are made of the resistance from time to time, they can be made to serve as indications of the rate of corrosion. The bureau has found that the necessary measurements can be made rapidly and with sufficient accuracy for the purpose. The method is applicable to cases such as metal roofs, whether or not they are covered with a protecting coat, such as paint.



NATIONAL LEGISLATION

WHILE THE NUMBER of bills passing through the legislative hopper proposing various forms of federal legislation daily grows with the introduction of measures by individual Congressmen, the national legislators' attentions have been centered during the month on the treaties formulated at the recent Armament Conference and on bills carrying appropriations for the support of the government during the year beginning July 1. The House has confined itself almost exclusively to consideration of appropriation bills and has only two more of these measures to enact, those providing funds for the Navy and for the Departments of State and Justice. The Senate, during lulls in debate on the ratification of the Armament Conference treaties, has given time to the passage of appropriation bills as these have been received from the House. One of these measures already is a law, that carrying funds for the Treasury Department, including the Mint and Assay Service and the Internal Revenue Bureau which are of direct importance to the mining industry.

Proposed federal blue sky legislation has taken greater steps in this Congress than any previous session. Heretofore these bills have been introduced, considered in committee, but no action taken thereon.

This session, however, Rep. Denison, Ill., has insistently pressed proposed government regulation of securities and has obtained from the Interstate Commerce Committee of the House a report on the third draft of his measure. This bill is now on the House calendar and may come up before the end of the session.

The most important proposal from a mining standpoint submitted during the month was one by Delegate Sutherland, Alaska, to create a government revolving fund of \$5,000,000 for the development of Alaskan resources. It is designed to be used for exploring, prospecting, drilling and development of oil or other minerals in Alaska and their disposition through competitive bidding. It would authorize the construction and operation of such plants, pipe

lines and other facilities for mining and disposing of minerals under the jurisdiction of the Interior Department, which has the approval of Secretary Fall.

The Senate Finance Committee is nearing completion of the revised tariff bill which is expected to be the basis of interesting Senate debates during the spring when the bill is before that body for action.

Among laws enacted by Congress and approved by the President during the month were: the establishment of a Marine Insurance code for the District of Columbia which is expected to be a model for other jurisdictions; exempting co-operative marketing associations in agriculture from anti-trust laws; authorizing citizens of Washington and Kane Counties, Utah, to cut timber in Arizona for mining purposes; agricultural entries on coal lands in Alaska, and the special coinage of gold dollars and silver half dollars in commemoration of the 100th birthday of Gen. Grant.

The House passed a bill continuing the law restricting immigration to 3 percent of those from foreign countries based on the 1910 population for one year or until June 30, 1923.

While the soldier bonus bill reported by the House Ways and Means contains no taxes there is a possibility additional taxes may be required to meet its obligations in future years. In committee consideration, the sales tax was defeated, only five members voting therefor.

Negotiations looking to the settlement of debts of foreign countries to the United States have been delayed due to a controversy in the Senate as to the eligibility of Senator Smoot of Utah and Representative Burton, Ohio, to serve on the debt commission. The other members of the commission are Secretaries of the Treasury Mellon, of State, Hughes, and of Commerce, Hoover. The Senate Judiciary Committee has reported that Smoot and Burton are not eligible to serve.

Committee consideration of important legislation has been confined to an investigation of an alleged dye monopoly by a subcommittee of the Senate Judi-

ciary Committee headed by Senator Shortridge of California; the Muscle Shoals, Ala., Nitrate Plant leases by the Senate Agricultural Committee and the House Military Committee, and the proposed Constitutional amendment to subject to federal taxation federal, state and municipal securities by the House Committee on Ways and Means.

ALASKA

(Development)

H. R. 10800. Introduced by Mr. Sutherland; referred to the Committee on Territories. This bill authorizes the development of the resources of the Territory of Alaska by providing "a development fund of \$5,000,000 to constitute a continuing appropriation and revolving fund for development of Alaskan resources." It authorizes the Secretary of the Interior to "explore, prospect, or drill for oil or other minerals upon the public lands or in the waters of the Territory of Alaska, and in the event of the discovery of oil or other minerals to dispose of the same through competitive bidding or such other method as he shall by general regulations adopt, subject to the provisions of existing laws or laws hereafter enacted; to secure to be constructed and operated smelters and ore-reduction plants, pipe lines, and other facilities for mining and disposing of minerals; to build wagon roads for the transportation of resources to the government railroad or to tidewater; to construct spur tracks and branches from the government railroad to operating mines; to build, lease or otherwise acquire dikes, wharves, and terminal facilities, and to take such steps and perform such acts as are ordinarily incident to the carrying on of exploring, prospecting, and drilling for oil or other minerals and caring for same until otherwise disposed of pursuant to this Act or other laws heretofore or hereafter enacted by Congress.

"In carrying out the provisions of this Act the Secretary of the Interior is authorized, through contract or other arrangement, to cooperate with the Territorial authorities, municipal authorities, or private individuals or corporations,

IMPORTANT BILLS REVIEWED IN THIS ISSUE

MINING—

- H. R. 10800: By Mr. Sutherland. (Alaskan mineral development)
- S. J. Res. 166: By Mr. Stanfield. (Suspension of assessment on mining claims)
- H. R. 10563: By Mr. Swing. (Indian mining lands)
- S. 3274: By Mr. Warren. (Amending leasing law)

BLUE SKY—

- H. R. 10598: By Mr. Denison. (Protecting state blue sky laws)
- H. R. 10645: By Mr. McClintic. (Blue Sky regulation by Federal Trade Commission)

WATERWAYS—

- S. 3240: By Mr. Smoot. (Patents on power or reservoir sites)
- S. 3266: By Mr. Lodge. (Purchase of Cape Cod Canal)

PUBLIC LANDS—

- S. 3237: By Mr. Smoot. (Amending laws regarding entries)

- S. 3238: By Mr. Smoot. (Sale of public lands for road improvements)

TARIFF—

- S. 3199: By Mr. Frelinghuysen. (Transferring Tariff Commission to the Commerce Department)

IMMIGRATION—

- H. R. 10606: By Mr. Johnson. (Revising immigration and naturalization laws)

MERCHANT MARINE—

- H. R. 10644: By Mr. Greene. (Government aid to shipping)

CLAIMS—

- S. 3193: By Mr. Elkins. (Refund of fines under the Fuel Control Act)
- S. 3200: By Mr. Frelinghuysen. (Settlement of Shipping Board claims by Court of Claims)

FINANCE—

- S. 3228: By Mr. Nicholson. (Extending War Finance Corporation securities)

wherever in his opinion the results sought to be accomplished by this Act may be more economically and expeditiously accomplished through such co-operation."

LEASING

(Indian Lands)

H. R. 10563. Introduced by Mr. Swing; referred to the Committee on Indian Affairs. This bill authorizes the Secretary of the Interior to lease for mining and other purposes "unallotted lands within Indian reservations created by treaty, act of Congress, or Executive order, not subject to lease under existing law, in such quantities and upon such terms and conditions and under such regulations as he may prescribe."

ANNUAL ASSESSMENT

(Mining Claims)

S. J. Res. 166. Introduced by Mr. Stanfield; referred to the Committee on Mines and Mining. This bill provides for the suspension as to all mining claims in the United States including Alaska during the year of 1920 and up to and including June 30, 1924, the requirements of section 2324 R. S. that on each mining claim not less than \$100 worth of labor shall be performed each year.

BLUE SKY

(Sale of Stock)

H. R. 10598. Introduced by Mr. Denison and reported by him to the House from the Committee on Interstate and Foreign Commerce. This is the final draft of the Blue Sky legislation which seeks to supplement state laws thereon through federal jurisdiction over the use of the mails and other commerce agencies for transporting and promoting the sale

of securities contrary to the laws of the states. The bill would be administered by the Department of Justice. It is more fully reviewed in a special article in this journal.

(Federal Trade Commission)

H. R. 10645. Introduced by Mr. McClintic; referred to the Committee on Interstate and Foreign Commerce. This bill would require persons, partnerships or corporations to submit to the Federal Trade Commission information respecting the sale of stocks, bonds and securities. The Commission would be authorized to issue to such concerns a certificate if the security offers a reasonably safe investment. Such concerns would be required to submit an annual report to the Commission on January 10.

TARIFF

(Tariff Commission)

S. 3199. Introduced by Mr. Frelinghuysen; referred to the Committee on Finance. This bill proposes to transfer the Tariff Commission to the Department of Commerce and to enlarge its duties to the extent of such investigations "to ascertain the conversion cost of articles manufactured or produced in the United States and in competing countries." The Secretary of Commerce is authorized to appoint from each interest (including agriculture, labor, manufacturing, mining, banking, import, export and transportation) advisors to the Commission and such additional representatives of each such interest as he deems necessary. Such advisors and representatives shall serve without compensation and for such time as the Secretary may deem necessary. They shall be so appointed that each such interest, and each

section of the country where any such interest has a substantial existence, is properly represented. Each such advisor or representative shall be appointed because of his knowledge and experience in the interest which he represents and without regard to his political affiliation. The bill further provides that whenever the conversion cost in the United States of an article is in excess of the conversion cost of such article in competing countries, the Secretary of Commerce shall recommend, so far as possible, the rate of duty required to scientifically equalize the difference between such conversion costs, in order that Congress may, whenever possible, fix specific rates of duty based on the American conversion cost. If dutiable raw materials are employed in the manufacture or production of an article in the United States, he shall recommend a compensatory duty in addition to the protective duty.

The bill appropriates \$1,000,000 to carry out these investigations.

INDIAN LANDS

(Leasing)

H. R. 10668. Introduced by Mr. Carter; referred to the Committee on Indian Affairs. This bill regulates the leasing of Indian lands in Oklahoma, providing as follows: "That hereafter nontaxable Indian lands in the State of Oklahoma shall not be leased or rented unless, in addition to the restrictions now imposed, if any, the immunity from taxation is waived, under regulations prescribed by the Secretary of the Interior, in so far as such immunity prevents the taxation by the State of Oklahoma, or by any political subdivision thereof, of the income of the lessees; Provided, That any tax upon any such income shall not be discrimina-

tory and that any such lands shall not be held subject to a lien for the payment of any such tax; and provided further, That nothing in this paragraph shall be construed to permit the taxation by the State of Oklahoma of the lands or of royalties or rents received therefrom by any Indian owners, except as now provided by law."

(Taxable Value)

H. R. 10773. Introduced by Mr. Gensman; referred to the Committee on Indian Affairs. This bill authorizes the Secretary of the Interior to appraise the taxable valuation of Indian lands not now subject to taxation in the several states "and determine the amount of taxes which would accrue to the several states if the Indian lands were subject to taxation by the states." Upon determination of such taxable valuation, the Interior Department shall pay to the states such sums as may be necessary to reimburse the states for the taxes which would be due them if the Indian lands were subject to taxes under State laws.

(Leasing)

S. 3274. Introduced by Mr. Warren; referred to the Committee on Public Lands and Surveys. It amends the Leasing Law of February 25, 1920, by providing that receipts from sales, bonuses, royalties, and rentals in connection with unallotted lands in Indian reservations therein shall be credited to the Indians on whose lands they accrue.

(Final Patent)

S. 3240. Introduced by Mr. Smoot; referred to the Committee on Public Lands and Surveys. This bill would authorize the Interior Department "to issue trust and final patents on lands withdrawn or classified as power or reservoir sites, with a reservation of the right of the United States or its permittees to enter upon and use any part of such land for reservoir or power site purposes."

PUBLIC LANDS

(Unappropriated Lands)

S. 3238. Introduced by Mr. Smoot; referred to the Committee on Public Lands and Surveys. This bill sets aside 10 percent of the unwithdrawn, unreserved, and unappropriated public lands in states having 10,000 acres or more of public lands. Such lands shall be grazing and forest lands and not contain oil, gas, or coal, and shall be sold at \$1.25 per acre to the government mineral rights. The funds from the sales shall be used to road improvements within the

TRANSPORTATION

(Fares)

H. R. 10774. Introduced by Mr. Harris; referred to the Committee on Interstate Commerce. This bill would forbid the

use of wooden cars between or in front of steel cars or steel underframe cars in the railroad passenger transportation service, designed to promote the safety of passengers and employes.

IMMIGRATION
(Uniform Rule)

H. R. 10860. Introduced by Mr. Johnson (Wash.); referred to the Committee on Immigration and Naturalization. This is a comprehensive bill revising the immigration and naturalization laws by providing "a uniform rule of naturalization and to amend and codify the laws relating to the acquisition and loss of citizenship; to equalize the citizenship status of men and women; to establish a method for the registration of aliens for their better guidance and protection; and for other purposes."

MERCHANT MARINE

(Subsidy)

H. R. 10644. Introduced by Mr. Greene; referred to the Committee on Merchant Marine and Fisheries. This bill amends and supplements the Merchant Marine act of 1920 by carrying out the President's recommendations for aid to the American Merchant Marine through subsidies based on tonnage.

CANALS

(Government Ownership)

S. 3266. Introduced by Mr. Lodge; referred to the Committee on Commerce. This bill proposes government acquisition of the Cape Cod Canal property at a cost of \$5,550,000.

CLAIMS

(Refunds)

S. 3193. Introduced by Mr. Elkins; referred to the Committee on Claims. This bill would authorize the Secretary of the Treasury to "refund, upon application therefor under such regulations as he may prescribe, to every person, partnership, association, and corporation the amount such person, partnership, association, or corporation has paid as a fine upon conviction of a violation of the provisions of section 4" of the Lever Food and Fuel Control Act.

(War Contracts)

S. 3200. Introduced by Mr. Frelinghuysen; referred to the Committee on Commerce. This bill provides for the settlement of claims against the Shipping Board by the Court of Claims.

FINANCE

(Bonds)

S. 3228. Introduced by Mr. Nicholson; referred to the Committee on Finance. This bill would authorize the War Finance Corporation to issue notes or bonds up to Jan. 1, 1925, maturing not later than Jan. 1, 1930.

INDUSTRIAL NOTES

THE HERCULES POWDER CO. has just issued a booklet covering flotation oil methods, containing much information which has long been desired by operators, and enabling the consumer to test flotation oils in his own laboratory. This booklet and another one, giving a brief survey of flotation, written by Dr. H. J. Stander, flotation engineer of the Hercules company, may be obtained by writing to the company's Naval Stores Division, Wilmington, Delaware.

The application of mine labor-saving machinery is treated in a bulletin issued by the Wellman-Seaver-Morgan Company, Cleveland, Ohio, special attention being given to car dumpers, excavators, filling bridges and excavating bridges for the copper industry. This bulletin describes what the company's experts believe to be a highly practical method of working low-grade ores, especially by the leaching method.

A new bulletin on the Quigley Fuel Systems, comprising methods of preparing, transporting, and burning of pulverized fuels has just been published by the Hardinge Company, 120 Broadway, New York.

This bulletin comes at a very opportune moment, for the burning of pulverized fuel has reached the stage in its development where its success is assured. It is now being specified by the largest power and heat engineers in the country as a solution to many problems involving the generation of heat.

The Wm. H. Rankin Company, advertising agents, through its research department has established a bureau for distributing specific, localized information about markets and potential customers, working upon data secured from government departments in Washington and the statistical bureaus of all the individual states. This service, filling one of the most definite needs which has arisen out of the intensification of selling methods, enters into greater detail than any of similar nature ever before attempted, taking the county as its unit of study, rather than the state or large city.

TO INSPECT FOREIGN MINES

MR. JOSEPH TEIPEL, assistant general manager of the Mancha Storage Battery Locomotive Company, a recognized authority on storage battery haulage, is making a tour of European mining fields for the special purpose of studying the mining methods employed, particularly in respect to mechanical haulage. During the tour, which will extend over a period of three months, Mr. Teipel will visit the mining fields of Wales, England, France, Belgium, Germany and Russia.



INTERSTATE COMMERCE COMMISSION HEARS DETAILS OF MINERAL RATE SITUATION

By C. H. FARRELL

BEFORE CONCLUSION of the general rate inquiry which the Interstate Commerce Commission recently completed, the American Mining Congress, on behalf of the Metal Mining Fund, which, in turn, represents the ore producers of Colorado, the board of directors of the Colorado Metal Mining Fund, a commission constituted by the General Assembly of Colorado, and the Colorado Metal Mining Association, presented a detailed statement calling attention to the deplorable condition of the metal mining industry in Colorado, where mining is to a large extent the sole industry and means of livelihood for the people. The present condition was likened to that existing in the copper camps in 1921, except that it did not follow a long period of prosperity, but, instead, followed a long period of dwindling output and great depression.

The decline in activity was not ascribed primarily to lessened demand for the product, because the mines produce both the precious and base metals together, and the fall in lead and copper has been offset by the higher price of silver. The real trouble was attributed to the increase in freight rates and that in smelting charges, which has naturally resulted because the method of mining in Colorado requires shipment of the concentrates to custom smelting plants, where the lead bullion and copper matte are separated and shipped to Eastern refineries for extraction of the precious metals before accounting is made to the miners for the proceeds, after deducting for losses in treatment, smelting charges and freight. In most instances, the charge for freight plus treatment has been doubled, with the result that a large proportion of what was ore becomes waste, because after deducting freight and treatment there is nothing left for the miner. The tonnage is reduced and the railroads lose not merely the revenue

from freight on ore but also that for hauling in coal and other supplies and from passengers. The final outcome has been that all the smelting plants in Colorado have closed excepting only those at Leadville and Durango, which plants may be compelled to suspend any day, leaving the mines of the state without a market.

Commenting on the bullion rate from Colorado common points to the Atlantic seaboard, the Commission is advised that General Order No. 28 of the Director General increased the rate from \$7.65 per ton to \$14.15 per ton, or 85 percent, instead of the 25 percent applied to numerous other commodities. Under Ex-Parte 74 a further increase was made, making the rate \$19 per ton, which, although paid by the smelting company, is passed back to the ore producer in treatment charges, with the result that the producers have been unable to bear the increased cost and ceased production.

The statement concludes with a showing of the large falling off in the tonnage of lead bullion and copper matte shipped from Colorado to Eastern refineries, and a request that the Commission make the following findings: (1) A uniform reduction of freight rates on ores and concentrates throughout Colorado, to the basis of the rates in force prior to May, 1918; (2) a revision of the freight rates on coal and coke from producing centers to metal mines and smelters, and (3) a modification of the rates on lead bullion and copper matte from Colorado common points to the Atlantic seaboard, to a parity with those in force prior to 1918.

INTERSTATE VERSUS INTRASTATE RATES—The controversy which has existed ever since the passage of the Transportation Act in connection with the jurisdiction of the Interstate Commerce Commission over intrastate rates was recently settled, so far as the Court is concerned, by the decision of the

Supreme Court of the United States in the Wisconsin case. The Court, in a unanimous opinion, upheld entirely the jurisdiction which the Commission took in making an order requiring the carriers operating in Wisconsin to increase their state rates up to the level prescribed by the Commission for interstate rates in the decision of August, 1920. Chief Justice Taft, who read the opinion, said, in part, that we "find the Commission for the first time vested with a direct power to remove any undue, unreasonable or unjust discrimination against interstate or foreign commerce," and, "if that purpose is interfered with by disparity of intrastate rates the Commission is authorized to end the disparity by directly removing it, because it is plainly an undue, unreasonable and unjust discrimination against interstate or foreign commerce within the ordinary meaning of those words."

Speaking of the two kinds of commerce he also said, "Effective control of the one must embrace some control over the other, in view of the blending of both in actual operation. The same rails and the same cars carry both. The same men conduct them. Commerce is a unit, and does not regard state lines, and, while under the Constitution interstate and intrastate commerce are ordinarily subject to regulations by different sovereignties, yet, when they are so blended together that the supreme authority, the Nation, cannot exercise complete effective control over interstate commerce without incidental regulation of intrastate commerce, such incidental regulation is not an invasion of state territory or a violation of the process." In concluding the opinion Chief Justice Taft suggested that the Commission's attention should be directed to substantial disparity which operates as a real discrimination against and obstruction to interstate commerce, and that "the Commis-

sion should leave appropriate discretion to the state authorities to deal with intrastate rates as between themselves on the general level, which the Interstate Commerce Commission has found to be fair to interstate commerce. A further suggestion that conferences between the Federal Commission and the State Commissioners might dispense with the necessity of any rigid Federal orders has already borne fruit, in that the Commission has arranged for a meeting with a committee of State Commissioners in the hope that cooperation may iron out the difficulties of the past.

PETROLEUM AND PETROLEUM PRODUCTS—In the course of the general rate inquiry what is known as the Petroleum Rate Committee, which consists of a large number of representatives of various petroleum companies throughout the country, and which is sponsored by the American Petroleum Institute, gave to the Commission its recommendations, which had previously been made to the Railroad Executives by the petroleum industry as a unit. Those recommendations are:

1. That the rates in official classification territory be readjusted on the basis of the rates in effect January 1, 1917, plus 40 per cent;

2. For New England a general flat reduction of 4½ percent per 100 pounds between all points in New England, and between trunk line territory and New England the same reduction, observing 90 percent of fifth class as a maximum; also from Central Freight Association territory to New England a readjustment on a basis of 2 cents per 100 pounds over the New York rates;

3. In Southern classification territory and Western classification territory, except the Pacific Coast, a reduction of 15 percent in the present rates plus a specific reduction of 4½ cents per 100 pounds, and a reduction of 15 percent in the proportional rates plus 2 or 2½ cents per 100 pounds;

4. For Pacific Coast territory a reduction of 15 percent plus a specific reduction of 4½ cents per 100 pounds; and

5. Elimination, for all territories, of the application of any minimum rate for short hauls.

COAL—Although throughout the general rate inquiry the necessity for reduced rates on coal was emphasized more than any other commodity, and, although the interest shown by all parties indicated a reduction in these rates if any reduction be allowed on any commodity, nevertheless continued activity in connection with numerous proceedings which are pending before the Commission has continued. A decision of the Commission which denied reductions in the rates on coal from the Southwestern field and the Springfield-Illinois District to Kansas City, Mo., has

been the subject of much comment, and the Commission has now, after considering petitions for reargument, decided to reopen the proceeding for further oral argument on the record as made. It will be remembered that in denying these reductions the Commission said that the whole matter of reduced coal rates was before it in the general rate inquiry.

There are also numerous cases pending which have to do with the rates from Illinois mines, and the Commission has been asked by the Fifth and Ninth Districts Coal Bureau of Illinois to institute a general investigation into all the coal rates from mines in Western Kentucky, Indiana, Illinois, Iowa, Kansas, Missouri, Arkansas, Colorado and Wyoming, and from the docks to all destinations in the States of Illinois, Wisconsin, Michigan, Iowa, Minnesota, North and South Dakota, Missouri, Kansas, Nebraska and Colorado, with a view of establishing a basis of rates which will give proper consideration to the claims of all sections. The Commission has also reopened for further hearing the question of intrastate rates within the State of Illinois for the purpose of determining whether or not the present intrastate rates on coal in Illinois are unduly preferential of intrastate traffic and shippers and of localities within the state, unduly prejudicial to interstate traffic and shippers and to localities outside the state, and unduly, unjustly and unreasonably discriminatory against interstate commerce. A general investigation has also been instituted for the purpose of determining the divisions which should be applied between carriers of the rates on bituminous coal to destinations in Michigan, Ohio, Indiana, Illinois and Wisconsin, it appearing that no realignment was made in these divisions by the carriers following the increases of August, 1920.

CAR LOADING—The last figures which are available indicate a slight increase in tonnage, there having been 67,969 more cars loaded with revenue freight during the week of March 4 than during the previous week. This week was also an increase over the corresponding week in 1921 of 91,888 cars, and a decrease under the corresponding week of 1920 of 7,851 cars. During this week coal showed increases over the previous week of 9,192 cars, over the corresponding week in 1921 of 54,891 cars and over the corresponding week of 1920 of 14,367 cars.

CAR SUPPLY—On February 28 the carriers announced that there were 417,964 freight cars idle because of business conditions, a reduction of 19,714 during the last 5 days of February. Of this total 245,100 cars were ready for immediate service and 172,864 cars were in need of repairs in excess of the number normally regarded as out of service. Coal cars

in good repair totaled 97,634, and box cars totaled 95,361.

WAGES—In comparing wages paid by the railroads with those paid by other industries the carriers reach the conclusion that they would have saved \$27,000,000 in October, 1921, if the same rates for labor paid in outside industries had been paid by the railroads. In the 66 comparable classifications of labor listed by the Interstate Commerce Commission, statistics given to the United States Railroad Labor Board are cited as bearing out this statement, and are as follows:

	In Outside Industries. Cents Per Hour.	On Eastern Railroads. Cents Per Hour.
Unskilled labor.....	30	41
Car repairmen.....	48.8	72
Machinists.....	56	77
Boilermakers.....	56.5	77
Passenger car men.....	57.6	77
Freight car men.....	57	72

EARNINGS—The carriers have announced that the net operating income for all lines in the month of January was \$29,604,000, or at the annual rate of return of 2.6 percent on their tentative valuation fixed for rate-making purposes by the Commission, compared with 3.4 percent in the month of December, 1921. Operating revenues showed a decline of 16 percent under January of last year, and operating expenses were decreased 23.7 percent. The carriers attribute this decline in the freight revenue under January of last year, while traffic was falling off only about 9 percent, to the rate reductions which have been put into effect on agricultural products and hay and grain, but also point out that there was an increase in the net operating income over January of last year, when it was only \$1,521,183, due in a large part to increased efficiency and economy in the operation of the roads.

Compared with the same month in 1921, maintenance expenditures during January fell off \$42,784,800, or 23 percent, the greatest reduction being in the Eastern district, where it was 24.4 percent, followed by the Western district with 22.2 percent, and the Southern district with 21.2 percent. Taken by districts and comparing with January of last year, we find in the Eastern district a reduction of 15.2 percent in operating revenues, one of 25.3 percent in operating expenses and a net operating income of \$19,314,400 compared with an operating deficit of \$99,706 last year. The net operating income for the month of January, 1922, was at the annual rate of return of 4 percent. In the Southern district operating revenues fell off 15.6 percent, operating expenses 22.6 percent and net operating income amounted to \$4,514,387, compared with \$1,627,496 in January last year. The return for January, 1922, was at the annual rate of return of 2.49 percent.

REPORT ON COOPERATIVE STUDIES AT CARNEGIE INSTITUTE

PROGRESS along lines of permanent value to the coal industry is noted in the recent report submitted by the Co-operative Department of Mining Engineering at the Carnegie Institute of Technology, Pittsburgh, Pa.

The personnel of the advisory board, which was enlarged at a meeting held on March 1, now stands as follows:

W. L. Affelder (chairman), Asst. to Pres., Hillman Coal & Coke Company; M. C. Angloch, Second Vice-Pres., Vesta Coal Company; W. R. Calverley, Pres., Union Collieries Company; A. P. Cameron, Gen'l Supt., Westmoreland Coal Company; C. E. Cowan, Chief Engineer, Jamison Coal & Coke Company; Howard N. Evanson, Consulting Mining Engineer; A. C. Fieldner, Superintendent, U. S. Bureau of Mines; W. E. Fohl, Consulting Mining Engineer; Robert Gibbons, Pres. Dist. 5, United Mine Workers of America; W. H. Glasgow, Asst. Gen. Supt., H. C. Frick Coke Company; J. H. Armstrong, Gen'l Mgr., Pittsburgh Coal Company; George S. Baton, Baton & Elliott, Consulting Engineer; John H. Jones, President, Bertha Coal Company; M. D. Kirk, Vice-President, Pittsburgh Terminal R. R. & Coal Company; W. A. Luce, Vice-President, Union Collieries Company; Alexander McCauch, State Mine Inspt.; G. F. Osler, Gen'l Supt., Carnegie Coal Company; A. R. Pollock, Gen'l Mgr., Ford Collieries Co.; John I. Pratt, State Mine Inspector; Edward Steille (secretary), Supervisor, Co-operative Mining Courses, Carnegie Institute of Technology.

The following problems are being studied by the research fellows under the cooperative agreement during the present school year:

1. Relative tendencies of various Pennsylvania bituminous coals to fire spontaneously, with particular regard to the influence of different coal constituents.
2. An investigation of acid resisting materials suitable for use in coal mines.
3. A microscopic study of the Freeport coal bed, with a view to the economic utilization of the bone and cannel coal constituents.
4. A study of the gas, oil and other by-products from the bone and cannel constituents of the Freeport coal bed.

LEAD AND ZINC ORE TRANS- ACTIONS TO BE STANDARDIZED

A PLAN for the standardization of sampling, assaying and settlement of zinc and lead ores, the first of its kind to be evolved, has been outlined by a joint committee of operators and smelters of the Missouri, Kansas and Oklahoma mining field. A committee of operators, appointed by the Tri-State Chapter of the American Mining Congress, met recently with representatives of the various smelters buying ore in that field, after which commercial assayers were called in for advice on technical subjects bearing on mining practice.

Representatives of the ore buyers were: George F. Braun, T. O. West,

H. E. Kingsbury, and Edward P. Dwyer. The members of the operators' committee were W. T. Landrum, F. N. Bendelari, M. F. Owen, and D. R. Muir.

Recommendations concerning sampling include one suggesting that more interest be taken in the sampling, both by the buyer and seller, and that special care be taken in seeing that proper samples are taken. The method of taking samples and their disposition and records of the lot and code numbers and corresponding car numbers form the subjects of other recommendations.

Standardization of assaying is sought by rules dictating the treatment of the samples and methods to be used by chemists in making their reports.

With reference to the prices asked by the chemists for complying with the requirements set down by the committee in respect to settlement, it was found by that body that the matter was outside of its province except that the prices be consistent with the work.

LARGE SAVING POSSIBLE TO ALUMINUM INDUSTRY

THE aluminum industry might effect an annual saving of \$600,000 annually if it were to put into effect recommendations made by the Bureau of Mines concerning the handling of scrap in aluminum-alloy foundry practice, according to experts of the bureau who have been investigating losses at this source, said to aggregate \$1,200,000 each year. Complete results of studies made in this connection are told in a bulletin on the subject soon to be issued by the bureau.

A number of other problems in the metallurgy of aluminum and its alloys have been receiving the bureau's special attention, through cooperative efforts with the industry, mainly as represented by the aluminum foundries of the Cleveland and Detroit districts.

ROLLED ZINC IN 1921

THE OUTPUT of rolled zinc in the United States in 1921 fell off nearly one-half, as shown by reports made to the United States Geological Survey by producers.

The market quotation, in mill lots at the smelters, at the beginning of 1921 was 11.5 cents a pound, with the usual discounts, but the quotation declined to 8.50 cents a pound at the close of the year.

The notable feature of the year in the rolled zinc industry was the importation of large quantities of sheet zinc, for only a few tons had been imported each year since 1915.

ECONOMY IN USE OF PERMISSIBLE EXPLOSIVES, SAYS DR. BAIN

THAT the use of permissible explosives in coal blasting operations is not only safer but in the final analysis more efficient and economical than the use of black powder is emphasized by Director H. Foster Bain, of the Bureau of Mines. The present closely competitive market in bituminous coal forces the operator to produce the maximum amount of lump coal, which commands a higher price than the smaller sizes, declares Director Bain. This in turn leads the mine operator and superintendent to produce the greatest possible percentage of lump coal with as little fines and slack as is possible. It has been brought to the attention of the bureau that there is a belief at some mines that a somewhat larger percentage of lump coal may be obtained by using black powder as an explosive rather than one of the permissible explosives on the Bureau of Mines list.

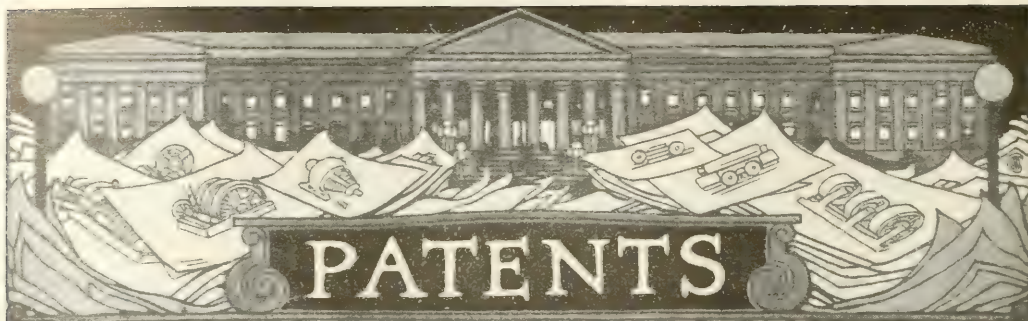
To those companies who have adopted the use of permissible explosives the bureau wishes to state that permissible explosives, if properly used, in not excessive amounts, will not produce any more slack and fines than will black powder. The bureau believes that a man who will use permissible explosives without skill will likewise use black powder without skill.

To those operators and superintendents who have not yet adopted permissible explosives, the bureau emphasizes that the gain in safety to the miners and the mine and, in the long run, the consequent decrease in the cost of operating the mine more than offset any extra cost of permissibles or slight loss of lump which may occur until the miner learns how to properly load and fire his permissible explosive.

TO STANDARDIZE TIES

UNIFICATION OF specifications for mining ties is included among the duties over which the American Railway Engineering Association and the U. S. Forest Service have been designated by the American Engineering Standards Committee to act as sponsors. This sponsorship, the committee announces, is to include standardization of all types of wood cross ties and switch ties, and will devote itself to inspection rules, and preservative treatment, but not methods of treatment.

For carrying out the work there will be organized a sectional committee having accredited members of all organizations represented at a previous conference which adopted recommendations on tie standardization, and also representatives of the American Mining Congress and the American Wood Preservers Association.



CONDUCTED BY JOHN BOYLE, JR.

1,402,099—*J. T. Shimin and C. E. Bushnell*, Butte, Mont., January 3, 1922.

FLOTATION APPARATUS comprising an agitation vessel, means for mechanically agitating an ore pulp and impelling it in a vertical direction therethrough, a duct exterior to said vessel and communicating therewith at top and bottom, the pulp being adapted to pass upwardly through said duct, a froth separating box communicating directly with the upper parts of said vessel and duct, and means for introducing air into substantially quiescent pulp in said separating box.

1,402,303—*E. M. Dougherty*, Webb City, Missouri, January 3, 1922.

ORE JIG of the Harz type provided with a supplementary jig associated with the discharge end thereof, such jig including a sieve disposed in a horizontal plane so as to form an overflow line in the same plane whereby provision is made for the free and equal action of the ore bed throughout the length of the stream, and thereby providing for free settling conditions and higher ore recoveries.

1,402,740—*M. K. Coddington*, San Francisco, Calif., January 10, 1922.

PROCESS OF TREATING ORE by gravity separation, which includes preliminarily violently agitating such ore to a finely powdered state at the ordinary temperature with a solution containing a neutral electrolyte and an alkaline electrolyte for a time sufficient to effect physical changes in the granule and thereafter separating by gravity.

1,402,741—*M. K. Coddington*, San Francisco, Calif., January 10, 1922.

EXTRACTING MERCURY FROM SULFIDE ORES with a composition comprising an aqueous solution of Chile saltpeter containing a minor amount of sodium carbonate and potassium carbonate.

1,402,742—*M. K. Coddington*, San Francisco, Calif., January 10, 1922.

PROCESS FOR EXTRACTING MERCURY comprising agitating the comminuted ore with alkaline solution of the character described in the absence of reducing metals and recovering metallic mercury separated thereby.

1,402,743—*E. S. Breckner*, Chicago, Ill., January 10, 1922. Assigned to Jacobson & Schrader, Inc.

SEPARATING APPARATUS comprising an essentially horizontal screen, means for reciprocating said screen longitudinally to advance the materials therein from one end thereof to the other end thereof, and means for directing the materials to fall through the screen, a receiving vessel positioned below to receive the materials so separated, and mechanism to

reciprocate said conveyer endwise to advance the materials thereon and finally discharge the same from the end thereof.

1,403,420—*H. F. Kohler*, Dunlo, Pa., January 10, 1922.

OPERATING MECHANISM FOR MINE SHAFT DOORS for opening the doors at different landings, only when the mine car is at the landing where a door is operated, novel means being provided for closing the doors at the time the car leaves the landing having the open door.

1,403,829—*A. Ball*, Clermont, N. H., January 17, 1922. Assigned to Jeffrey Mfg. Co., Columbus, Ohio.

MINING MACHINE having improved means for feeding and guiding while performing the cutting operation. By the improved arrangement it is possible for the feed operating member to cooperate with a flexible feeding member on the advancing side of the machine and thereby to cut closer to the rib. It is also made possible to reduce the length of the machine to a minimum, thereby making the machine adapted to close work. Further, in this embodiment, all the parts are arranged substantially concentric in relation to the vertical longitudinal planes of the machine so that the apparatus is simplified, the parts are all arranged so as to be protected, none of them extending laterally to form projections liable to breakage and to interfere with the positioning of the machine to the best advantage in relation to the walls of the mine room.

1,404,353—*A. B. Ellis*, Ventura, Calif., January 24, 1922.

PROCESS FOR SEALING DRIVEN WELLS against access of water to the well casing from permeable strata surrounding the casing, which consists in directing a stream of water radially from the casing in a plane above the lower end of the casing against the earthen wall of the well until the bore of the well has been locally enlarged with a resultant pocket entirely surrounding the casing and subsequently ejecting cement from the casing into and filling the pocket.

1,404,742—*E. C. Condit*, Silverton, Colo., January 31, 1922.

MINE VENTILATOR having a combustion chamber through which passes the ventilator duct for removing dust and noxious gases from the tunnels, shafts and other parts of the mine. The ventilator duct and the gases within the same at this point are thus brought to a high temperature, before passing out to the atmosphere, thereby creating a draft in the duct. The furnace will also serve as a means for heating the room or building in which the ventilator is located.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

OF THE MINING CONGRESS JOURNAL, published monthly at Washington, D. C., for April, 1922.

City of Washington, District of Columbia, ss.:

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared E. Russell Coombes, who, having been duly sworn according to law, deposes and says that she is the business manager of THE MINING CONGRESS JOURNAL, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C. Officers:

W. J. Loring, President, San Francisco, Calif.

Daniel B. Wentz, First Vice-President, Philadelphia, Pa.

E. L. Doheny, Second Vice-President, Los Angeles, Calif.

Thomas T. Brewster, Third Vice-President, St. Louis, Mo.

J. F. Callbreath, Secretary.

Editor—J. F. Callbreath.

Managing Editor—Ira L. Smith.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 percent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

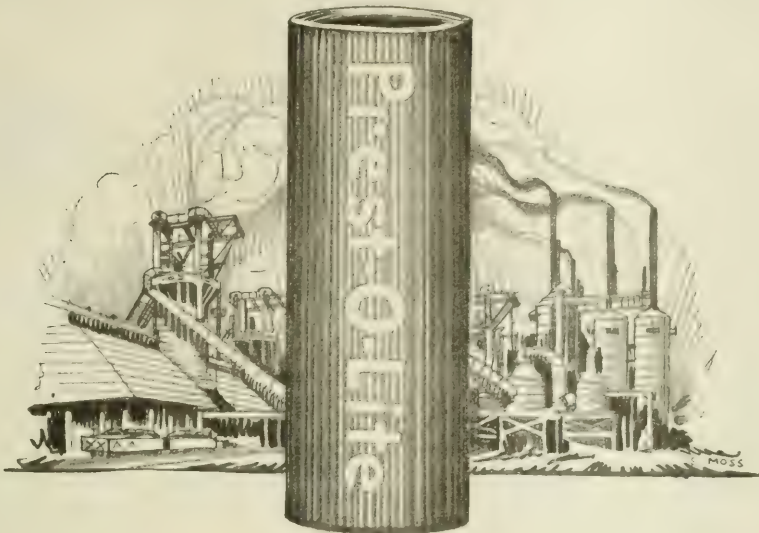
3. That the known bondholders, mortgages, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

E. RUSSELL COOMBES,
Business Manager.

Sworn to and subscribed before me this 22d day of March, 1922.

(Seal) F. T. STEPHENSON,
(My commission expires May 4, 1926.)

Read on this page, from issue to issue, a description of the features which have made Prest-O-Lite a national institution



The Test of Time

In the years since Acetylene first became a commercial product, users of the gas welding and cutting process have been offered many substitute fuel gases. Unwarranted claims for these substitutes have failed to stand the test of time and actual performance.

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Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.

AMALGAMATORS

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APPLIANCES ENGINEERING

Lunkenheimer Co., Cincinnati, Ohio.

ARMATURES

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ASBESTOS PRODUCTS

Mikesell Bros. Co., 156 North La Salle St., Chicago, Ill.

ASSAYERS

Indiana Laboratories Co., Hammond, Ind.
Pennsylvania Smelting Co., Pittsburgh, Pa.

AUTOMATIC CAR CAGERS

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

AUTOMATIC COAL SKIP

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

AUTOMATIC (Mine Doors, Truck and Electric Switches)

American Mine Door Co., Canton, Ohio.

BAROMETERS

Taylor Instrument Companies, Rochester, N. Y.

BATTERY-CHARGING EQUIPMENT

General Electric Co., Schenectady, N. Y.

BELTING (Conveyor, Elevator, Transmission)

Jeffrey Mfg. Co., 958 N. Fourth Avenue, Columbus, Ohio.

BELTING, SILENT CHAIN

Morse Chain Co., Ithaca, N. Y.

BINS (Coke and Coal)

Jeffrey Mfg. Co., Columbus, Ohio.

BIT SHARPENERS

Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., 11 Broadway, New York City.

BLASTING POWDER

Atlas Powder Co., 334 King St., Wilmington, Del.

BLASTING SUPPLIES

Atlas Powder Company, Wilmington, Del.
du Pont Powder Co., The E. I., Wilmington, Del.
Hercules Powder Co., 334 King St., Wilmington, Del.

BLOWERS

General Electric Co., Schenectady, N. Y.

BLOWERS' CENTRIFUGAL

Ingersoll-Rand Co., 11 Broadway, New York City.

BOILER MOUNTINGS

Lunkenheimer Co., Cincinnati, Ohio.

BOILERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis. (feed pump).

BOXES, JOURNAL

J. R. Fleming & Son Co., Inc., Seranton, Penna.

BRATTICE CLOTH

Mikesell Brothers Co., 156 N. La Salle Street, Chicago, Ill.

BREAKERS (Construction and Machinery)

Jeffrey Mfg. Co., Columbus, Ohio.
Vulcan Iron Works, Wilkes-Barre, Pa.
Wilmut Engineering Co., Hazleton, Pa.

BRIQUETTING MACH.

Jeffrey Mfg. Co., Columbus, Ohio.

BUCKETS (Elevator)

Jeffrey Mfg. Co., Columbus, Ohio.

CABLES (Connectors and Guides)

American Mine Door Co., Canton, Ohio.

CABLEWAYS

Jeffrey Mfg. Co., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAGES

Car-Dumper & Equipment Co., Chicago, Ill.
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Holmes & Bros., Robert, Inc., Danville, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAGE (Safety Appliances)

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

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Car-Dumper & Equipment Co., Chicago, Ill.

CAR DUMPS

Car-Dumper & Equipment Co., Chicago, Ill.

CAR AND CAR WHEELS

Hockenmuth Mine Car Co., Penn Station, Pa.

CAR-HAULS

Car-Dumper & Equipment Co., Chicago, Ill.

CASTINGS

Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio.
The Lunkenheimer Co., Cincinnati, Ohio.

CHAINS

Jeffrey Mfg. Co., Columbus, Ohio.
Morse Chain Co., Ithaca, N. Y.

CHEMICALS

Roessler & Hasselbacher Chemical Co., 709-717 Sixth Avenue, New York.

CHEMISTS

Hunt, Robt., & Co., Insurance Exchange, Chicago, Ill.
Indiana Laboratories Co., Hammond, Ind.

CIRCUIT BREAKERS

Automatic Reclosing Circuit Breaker Co., The Columbus, Ohio.
General Electric Co., Schenectady, N. Y.

CLAMPS (Trolley)

Ohio Brass Co., Mansfield, Ohio.

CLUTCHES

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

COAL COMPANIES

Clinchfield Coal Corp., Dante, Va.
Lehigh Coal & Navigation Co., Philadelphia, Pa.
Stonega Coal & Coke Co., Philadelphia, Pa.
Thorne, Neale & Co., Philadelphia, Pa.
Wholesale Coal Co., Pittsburgh, Pa.

COAL CRUSHERS

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., Columbus, O.

COAL CUTTERS

Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio.

COAL DRYING PLANTS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL HANDLING MACHINERY

Jeffrey Mfg. Co., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL MINING MACHINERY

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Goodman Mfg. Co., Chicago, Ill.
Ingersoll-Rand Co., 11 Broadway, New York City.
Jeffrey Mfg. Co., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL MINE POWER PLANTS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL MINING PLANTS

Ingersoll-Rand Co., 11 Broadway, New York City.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL WASHING PLANTS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COCKS (Locomotive, Cylinder and Gauge)

The Lunkenheimer Co., Cincinnati, Ohio.
Nicholson, W. H., & Co., Wilkes-Barre, Pa.

COILS (Choke)

General Electric Co., Schenectady, N. Y.

COMPRESSORS, AIR

General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., 11 Broadway, New York City.

COMPRESSORS, MINE CAR

Ingersoll-Rand Co., 11 Broadway, New York City.

CONCENTRATORS (Table)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

CONCRETE REINFORCEMENT

American Steel & Wire Co., Chicago and New York.

CONDENSERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Ingersoll-Rand Co., 11 Broadway, New York City.

CONSULTING ENGINEERS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

CONTRACTORS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

CONTROLLERS

General Electric Co., Schenectady, N. Y.
Goodman Manufacturing Co., Halsted St. and 48th Place, Chicago, Ill.

CONVEYORS, BELT

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CONVEYORS, CHAIN FLIGHT

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Wilmut Engineering Co., Hazleton, Pa.

CONVEYORS, COAL

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CONVEYORS AND ELEVATORS

Jeffrey Mfg. Co., Columbus, Ohio.

CONVEYORS, PAN OR APRON

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CONVEYORS, SCREW

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

COPPER ELECTROLYTIC

United Metals Selling Co., 42 Broadway, New York City.

COPPER WIRE

Anaconda Copper Mining Co., 111 W. Washington St., Chicago, Ill.

CORE DRILLING

H. R. Ameling Prospecting Co., St. Louis, Mo.
Hoffman Bros., Punxsutawney, Pa.

COUPLINGS

Nicholson, W. H. & Co., Wilkes-Barre, Pa.

CRUSHERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CRUSHERS, COAL

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CRUSHING PLANTS, COKE

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CYANIDE

American Cyanamid Co., New York, N. Y.
Roessler and Hasslacher Chemical Company, 709 Sixth Avenue, New York City.

DESIGNERS OF PLANTS

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

DIAMOND CORE DRILL CONTRACTING

H. R. Ameling Prospecting Co., Rolla, Mo.
Hoffman Bros., Punxsutawney, Pa.

DOORS, AUTOMATIC MINE

American Mine Door Co., Canton, Ohio

DRAG LINES

Denver Rock Drill Mfg. Co., Denver, Colo.
Williamsport Wire Rope Co., Gen. Sales Office, 1301 Peoples Gas Bldg., Chicago, Ill.

DREDGES, GOLD AND TIN

New York Engineering Co., 2 Rector St., New York City.

DRIFTERS, DRILL

Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., New York City.

DRILLS, AIR & STEAM

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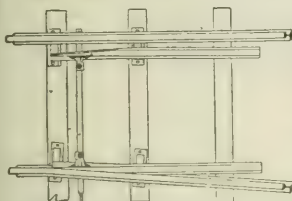
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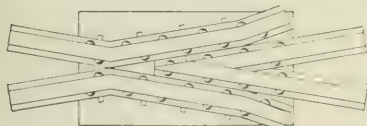
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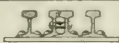
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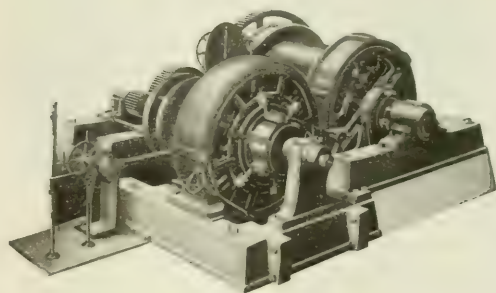
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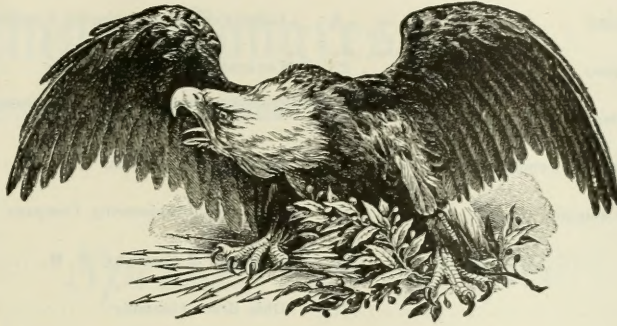
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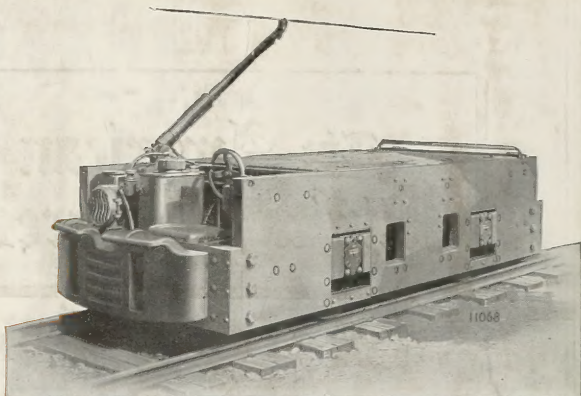
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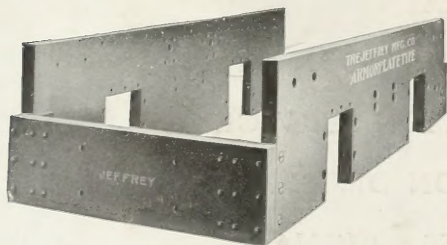
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